July 2010

TxDOT Website Analysis and Evaluation Project

Executive Summary

Design For Use, LLC

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Executive Summary

In April 2010, the Texas Department of Transportation (TxDOT) contracted with Sherry Matthews Advocacy Marketing (SMAM) to conduct a usability evaluation of TxDOT's current website. SMAM partnered with Design For Use to conduct the study.

The primary objectives for this evaluation were to measure the effectiveness of txdot.gov against the following criteria:

- Does the website adhere to the tenets of good design and navigation practices?
- Can a majority of users easily find what they are looking for on the site?
- Are the primary tasks that attract visitors to the site accomplished in a reasonable time and with a reasonable amount of effort?

Study findings and recommendations are intended to improve the overall user experience and address the website's navigation, informational hierarchy, content, and visual design. In an evaluation of this type, a representative group of website users should be able to complete most of the primary tasks without assistance and should respond positively to the website.

Process

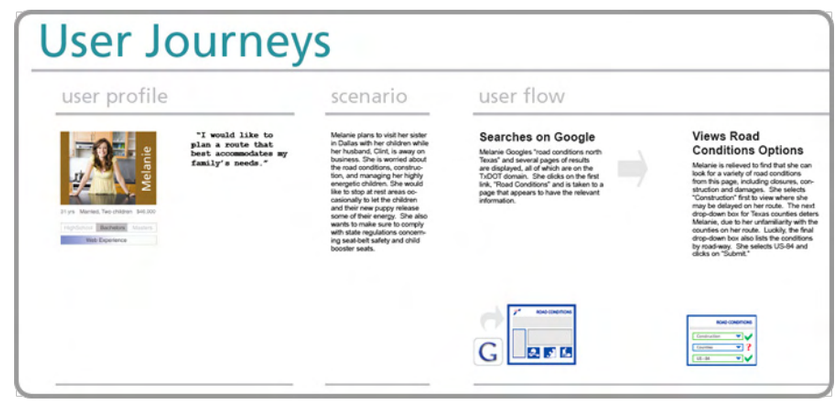
Stakeholder Interviews

Design For Use met with stakeholders from TxDOT and Sherry Matthews Advocacy Marketing to determine the scope of the project, including:

- Main goals
- Success metrics
- Challenges and opportunities
- User groups and needs

User Profiles and Journeys

- User profiles were created based on feedback from stakeholder summaries and website statistics (such as most frequent page views, most common search terms, and most downloaded forms) to represent broad categories of website visitors, such as the traveling public, natural disaster evacuees, TxDOT contractors and Texas lawmakers.
- Each of the seven user profiles represents a different group of people who use the TxDOT website to find information and accomplish specific tasks.
- The user journeys identify tasks and actions users might follow to accomplish their goals on the website.

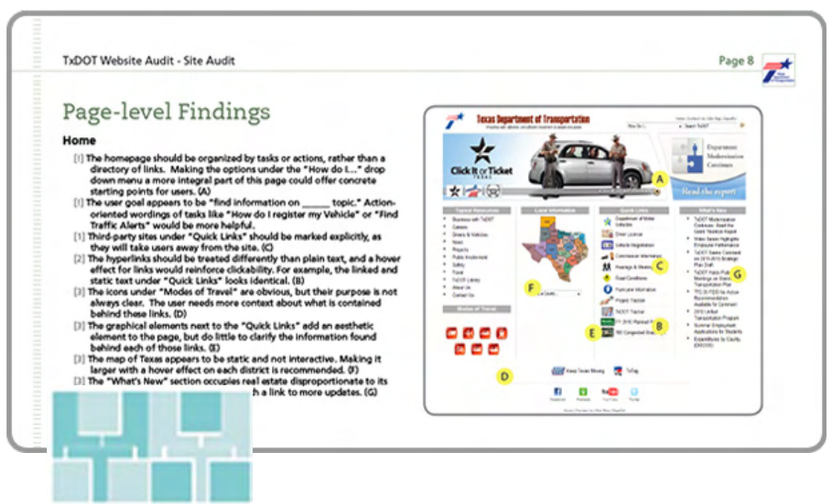


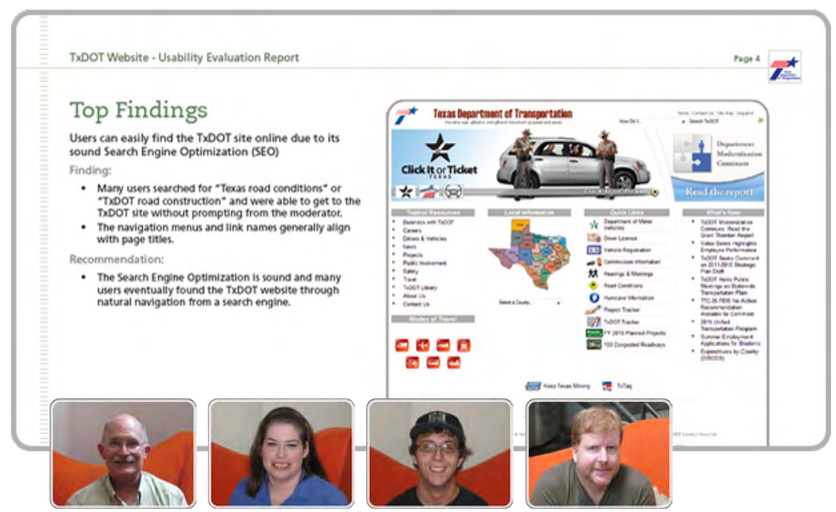
Website Audit

- A website audit was conducted by usability professionals from Design For Use to identify the strengths and weaknesses of the TxDOT website.
- The website was also compared to two other government transportation websites.
- Usability experts attempted to accomplish the same goals as the user needs determined by the profiles and journeys.
- Twelve key pages of the TxDOT website were evaluated against accepted best practices for user-friendly website design.

Usability Study

- Twenty-six individual users were recruited and participated in a usability evaluation directed by a trained moderator. Over the course of 60-90 minutes, they completed a series of common tasks on the website, such as finding information on TxDOT projects, checking for updates on traffic and road construction, and viewing the schedules for meetings and hearings.
- The study identified and confirmed the major challenges many users experienced when trying to accomplish their goals.





What This Report Includes

- This executive summary combines key findings from both the website audit and the usability study to document the most compelling and important feedback for making website improvements.
- All research documents, including the stakeholder summary, user profiles, user journeys, website audit, and usability study, also are available for those interested in a more in-depth view of the evaluation process and more detailed findings.

Findings and Areas for Improvement

1. TxDOT website is easy to find.

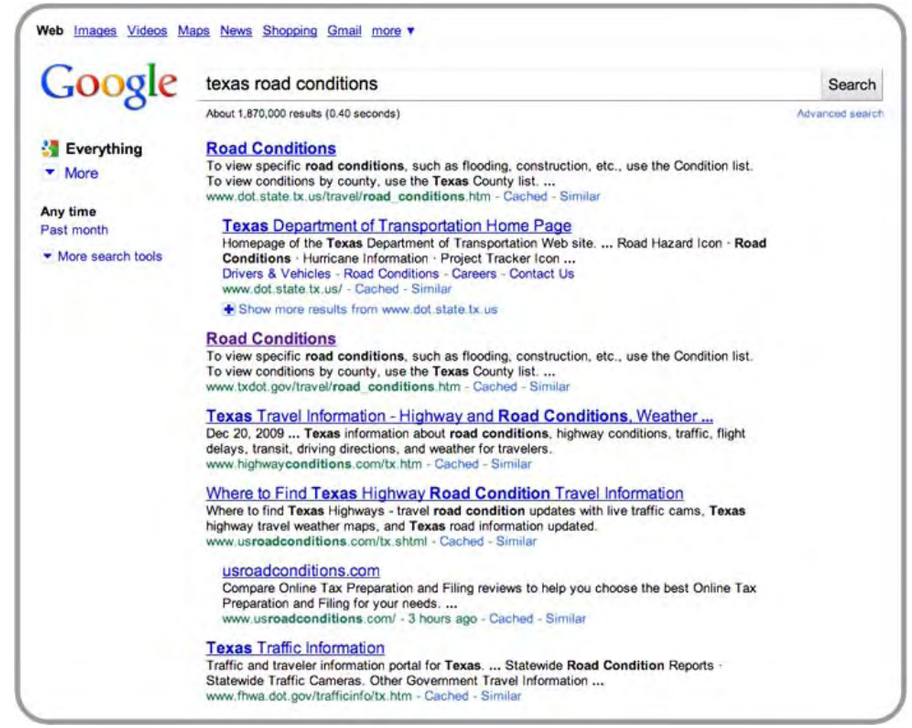
Users can easily find the TxDOT website due to the accurate key words used to describe the homepage (also known as Search Engine Optimization or SEO).

Findings:

- Many users searched for “Texas road conditions” or “Texas construction” in Google or another external search engine and were able to quickly get to the TxDOT website without prompting.
- Keywords and descriptions on most pages align with the information found on the page.
- It is clear that TxDOT has taken significant steps to categorize the information on its website.
- The menus and link names generally align with page titles.

Conclusions:

- TxDOT has done a good job making the website easy for users to find.
- The keywords align correctly with information found on most content pages; the Search Engine Optimization is sound.



2. The txdot.gov homepage can be overwhelming for some users.

There are over 50 links and options for users to choose on TxDOT's homepage. This extensive number overwhelms many users.

Findings:

- Most users indicated they were overwhelmed by the number of options available on the homepage.
- Due to the large volume of links, it often was confusing for users to decide which link to select. Users often defaulted to using the Search function to help them find information.
- Participants used the "Quick Links" navigation, but had little use for the "What's New" section.
- The district map is confusing and hard to manipulate; after clicking on the map, participants expected to be taken directly to county (rather than district) information.

Recommendations:

- Organize the homepage by tasks and actions (such as relevant forms, tools, and events), rather than as a list of links.
- Given that it consistently was the most commonly used feature, make the "Quick Links" box a more prominent part of the homepage.
- Make the search box easier for users to quickly find.
- Making the options under the "How do I…" drop down menu a more integral part of this page would offer concrete starting points for users.
- Since the "What's New" section occupies real estate disproportionate to its usefulness, make it smaller and move it below the primary content.
- The current district map should be repositioned and made clickable by county. Also add hover text to indicate its clickability.

3. The left menu should be simplified.

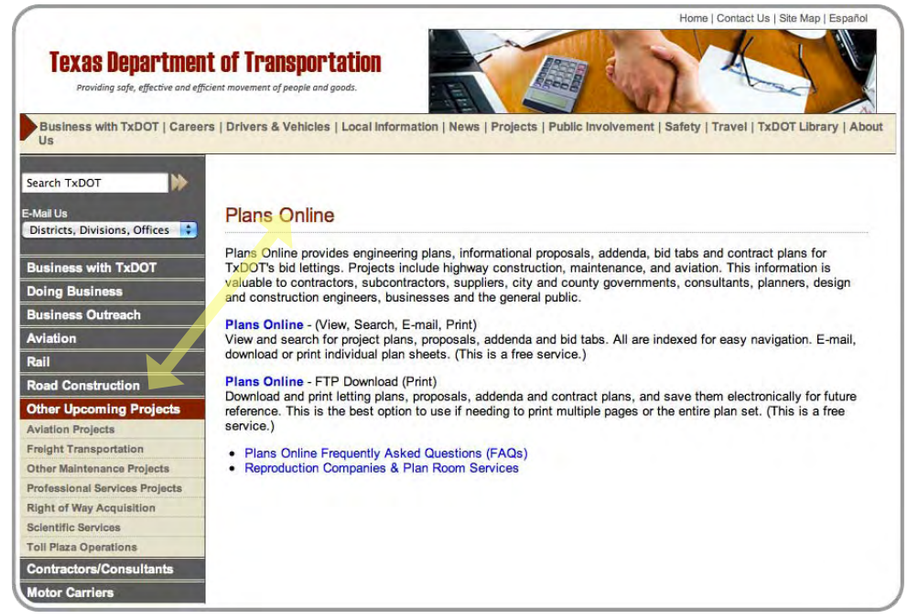
Left menu choices are inconsistent and should be simplified.

Findings:

- The large number of choices in the left menu makes it challenging for users to find information.
- The category overview page often duplicates links already available in the left menu.
- Participants relied on the left menu to move through the website, but were often confused when the menu changed (specifically with content shared by different parts of the website).
- The menu options do not always align with the information displayed in the main content area (see image).
- Some menu labels and language are formal and TxDOT-oriented, rather than user-focused.

Recommendations:

- Highlight common tasks, FAQs, or popular forms in the main content area to reduce the number of choices in the left menu.
- Organize the left menu by user priority; for example, place pages and items with the highest page views at the top of the menu.
- When a user selects an item from the left menu, the item should become more visually distinct from other menu items so the user can track his/her navigation.
- Change what appears in the main content area of the page to reflect the selection in the left menu.



4. The transition to non-TxDOT websites should be consistent.

Currently there is no standard transition when a user is redirected to a non-TxDOT website, such as when users are linked to other state agency websites to renew their vehicle registration or driver license.

Findings:

- Users either do not notice or do not pay attention to the page that notifies them that they are leaving the TxDOT site (such as when going to DMV, DPS, or Twitter).
- Although TxDOT, DMV, and DPS serve different purposes, users were not concerned with understanding those differences.
- The intermediary page confirming the user wishes to leave TxDOT does not always appear; the transition to non-TxDOT sites should be consistent.

Recommendations:

- Remove intermediary pages that notify the user that they are leaving txdot.gov, and consider identifying outside sites by a simple icon or graphic.
- No explanation of the different state agencies is needed.
- TxDOT can continue to serve as a portal for users looking for DMV- and DPS-related information and tasks (driver license, registration, bill of sale, etc) by making it simple and easy for the public to accomplish these popular tasks.

5. The current visual design is text-heavy and there are screen resolution issues.

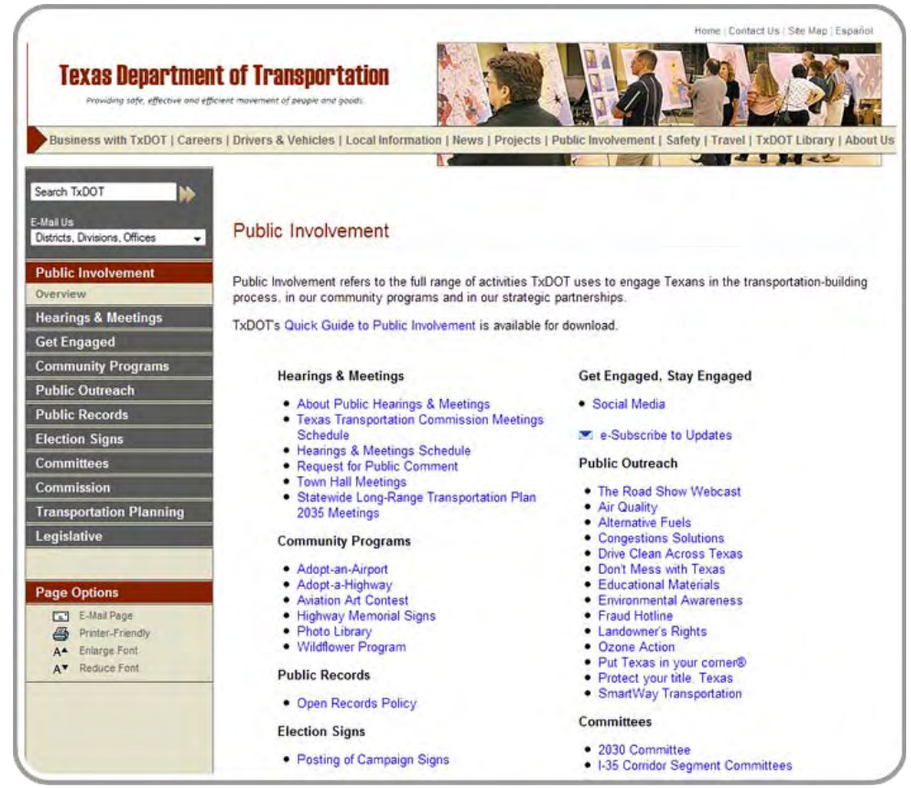
The website's visual design and screen resolution can be improved to create a more contemporary site that is easy to navigate.

Findings:

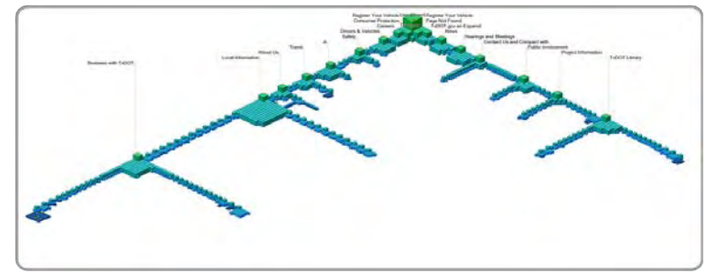
- Many of the website's pages rely heavily on written content or lists of links. Users have trouble finding pertinent information due to the amount of reading and searching required to accomplish a task.
- Currently, as a user expands or contracts their internet browser window size, the page content does not resize itself to fit in the browser window. Web standards indicate that website content should adjust as the browser size changes.

Recommendations:

- Using more images and including sub-headings within text would make it easier for users to scan the content.
- Redesign the website with a default resolution of 1024x768 pixels, which should degrade gracefully at lower resolutions. (An example and further explanation of this can be found at http://www.w3.org/TR/WCAG-TECHS/G146.html)
- With the exception of the homepage, the look and feel of the rest of the site — graphical elements, page layout, and colors — would benefit from a more contemporary look to help users more easily find what they are looking for.



6. The size of the website makes it challenging to organize and update.



TxDOT's website is comprehensive, and it currently has more than 20,000 pages of content. The large number of pages makes it hard to update and organize the site.

Findings:

- TxDOT's website is exceedingly broad and deep, covering an extensive amount of information. As a result, many content pages contain an excessive number of links, which is confusing for the user.
- There are many broken links leading to errors on the site. Identifying and fixing these links would be easier with the help of a Content Management System (CMS).
- There are several different visual designs currently in use that need to be updated (for example, TxDOT Expressway).
- Browsing the site alone cannot reveal all the information in contains, especially if the information is rarely accessed. This could be addressed by making the search function within the TxDOT site more robust. These tasks can be done more easily with a CMS.

Recommendations:

- Implement a Content Management System (CMS) to manage the volume of content on the site, make updates more efficiently and remove out-dated material.
- The CMS should allow the TxDOT web team to publish updates to the website in a more timely matter, rather than going through Technology Services Division (TSD).
- A new scheme for content categories should be validated with a card sort exercise, which may help reclassify outlying information and narrow the breadth of the site.
- Consider conducting a content inventory to identify pages that can be combined or discarded.

7. The drop-down menus confused users.

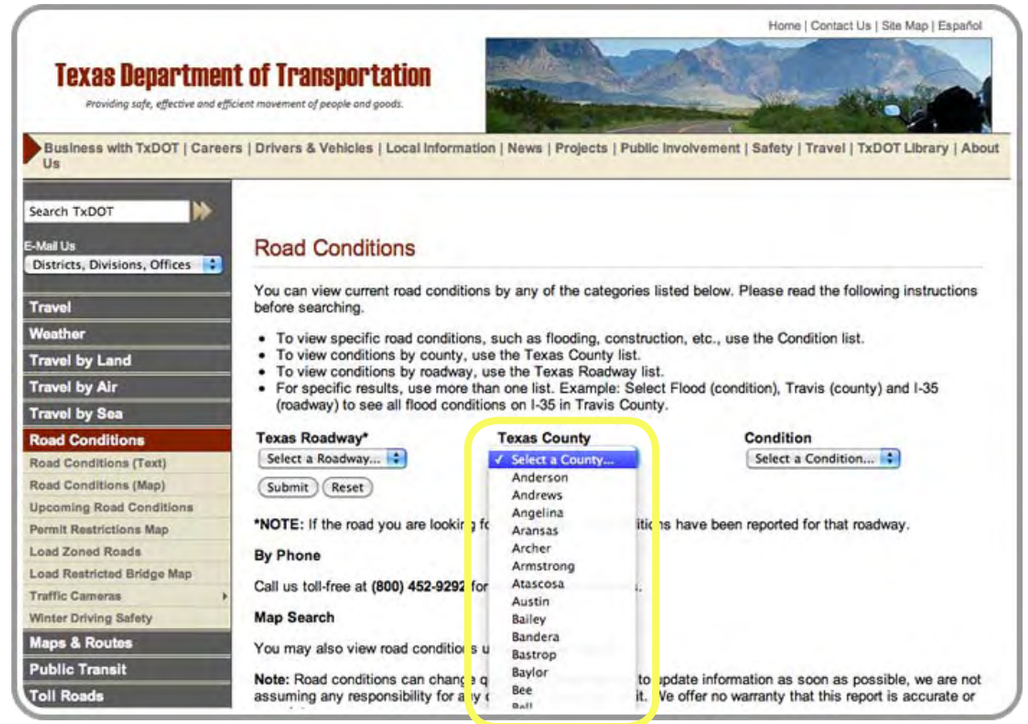
Drop-down options within tools and databases should be presented by county or city consistently.

Findings:

- Online tools and databases (for example, Road Conditions, Project Tracker, Contact Us, TxDOT Expressway, Careers) are organized by either district, division, county, city, or roadway on various page throughout the site, which is confusing for the user.
- When presented with a drop-down list of counties, many users could not find the correct location they were looking for. For example, a common mistake for Austin-based users was the selection of "Austin" as their county instead of "Travis" when presented with the list of Texas counties from which to choose.
- The average website user does not understand the difference in categorization between TxDOT districts and divisions.

Recommendations:

- Limiting the methods of finding local information would be helpful to the user (present either by county, city or roadway).
- Providing the county seat or largest city in parentheses next to the county name would improve the accuracy of the users' search. (Example county drop-down: Travis (Austin), Harris (Houston)).



Conclusion

Users come to txdot.gov with specific tasks they want to accomplish. The TxDOT website has a wealth of helpful information, and due to its comprehensive size, it is not always easy for users to navigate.

The website can be made more useful to the public by prioritizing and simplifying content, specifically in the following ways:

- Reducing the number of links on the homepage
- Highlighting navigation aids like the search function
- Allowing fewer menu choices throughout the website will actually help the public find the most relevant and useful information quickly.
- Adopting more consumer-focused language instead of TxDOT-specific terms and phrases (for example, on Project Tracker) will not only make website easier to get around, it will make TxDOT approachable and accessible.
- Using simple, easy-to-understand graphics and applying the default resolution of 1024x768 will make the site easier to use and look more visually pleasing.
- Implementing a content management system will ease the maintenance and organization of the website and allow TxDOT's web team to make timely updates and remove out-dated material in the most efficient way possible.

July 2010

TxDOT Website Analysis and Evaluation Project

Part 1: Stakeholder Interviews

Design For Use, LLC

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Stakeholder Interviews

Overview and Protocol

Stakeholder interviews were scheduled and conducted at the Sherry Matthews and TxDOT offices in Austin, Texas on May 3 and 6, 2010. Throughout the week, representatives from TxDOT and Sherry Matthews were invited to sit down and share their goals, metrics for success and the perceived challenges they face.

Interviews followed the same general protocol for each session.

- Stakeholders met with Design For Use team members for approximately 60 minutes each to discuss the TxDOT website evaluation project.
- An introduction to the interview methodology and context was given to the stakeholders.
- Stakeholders were asked about the primary role in the organization and their role within TxDOT specifically.
- Interviews focused on goals, metrics, and challenges for the stakeholders. Additional stakeholder-specific questions and topics of discussion were part of the conversation.
- In this document, bracketed numbers indicate comments from a specific interview session.

Purpose

The purpose of these interviews was to gain further insight into the business requirements, internal processes, and expected success metrics for the stakeholders. The findings that are highlighted in this document will be used to validate the team's common goals and will also inform the subsequent design deliverables.

Qualitative Objectives

Organizational

- Identify what issues people have when coming to the site, what can be improved. [s2]
- The organization of the site needs improving because it is hard to find things when you need them. [s1]
- Find the best way to organize and structure the information on the site so users can find it quickly. [s2]
- Recognize whether there is some information on the site that is unnecessary. [s2]
- Too much of a reliance on micro-sites and third-party sites [s1, s2], which makes it hard to find information and navigate the site.

Branding

- Find out what the public thinks of TxDOT; what they like/dislike about the way the site is organized. [s1, s2]
- Can do a lot more communication with the webpage [s2]
- Use the website as a PR tool to improve the public perception of TxDOT. [s1]
- Need to distinguish between TxDOT, DPS, and DMV [s1], or gauge the degree to which those differences matter to the user. [s2]
- It would be good to take time to improve the website and shore up some public good will. [s1]

Website Tone, Descriptors

- All TxDOT related sites should have similar branding and visual design, making it clear that they are part of the oneDOT philosophy. [s2]
- The different layouts and URLs of the micro-sites do not make it obvious that they are related to TxDOT. [s1]
- Finding of previous focus group indicated that the website was "confusing," and effort has been made to provide more clarity. [s2]
- Website should be: truthful, helpful, useful, clean and clear. [s1, s2]

Success Metrics (Quantitative)

Organizational

- At one point, TxDOT had 200,000 documents on its website, and that number has been reduced to 20,000. Reducing that number further would be ideal. [s2]
- Website content can be reduced by examining which pages get fewer than 50 hits a month and evaluating their need. [s2]
- Website content could be limited by putting a cap on the number of pages a certain division can have, for example 4 or 5 pages. [s1]
- Identify 5-6 main site issues to focus on for usability testing, and 6-7 tasks that users need to complete. [s2]

Experiential

- Considering that the most common task is downloading forms, this task should be given priority over other tasks in navigation. [s2]
- The task for renewing a drivers' license previously fell within the top 10 user needs, but now it is not even in the top 15. Considering this is a task for DPS, the traffic for drivers' license needs should decrease even further. [s2]
- Determine the issues people encounter when coming to the site, and gain different perspectives about what they can accomplish on the site. [s2]

Challenges / Risks

Organizational

- Not clear to what extent users need to know the difference between DPS, DMV, and TxDOT. Many users come to the TxDOT site to complete tasks relating to DPS and DMV, but it's easy to redirect them to the other sites. A goal for the usability testing is to determine how to highlight that a user is transferring between the sites, or whether any explanation is necessary at all. [s1, s2]
- There are a lot of local districts and divisions whose information becomes integrated into the TxDOT website, but there is little restriction or control over what is posted online. [s1]

Users

- User groups need to be more clearly defined. "The population of Texas" is not a specific enough demographic. [s1]
- Different generational demographic information should be collected; the way a 25-year-old uses the site is different than how a retiree interacts with TxDOT. [s2]

Technical

- The site would benefit from a CMS that manages the date that certain pages should be removed. [s2]
- Need to gauge the type of technology people would like to see on TxDOT; providing SMS, Text, or Twitter updates for road conditions and inclement weather. [s2]
- Due to the fact that many users are in rural areas and still rely on dial-up internet connections, the site cannot be too advanced technically or some users will not be able to access site (especially with the potential use of Flash). [s2]
- There is no clear indication of how many micro-sites link from the TxDOT site, and no system in place to count those micro-sites. Identifying the various project, safety campaign, and district sites is necessary to eventually incorporate their branding into one DOT. [s1]

Content

- Pages like Texas Expressway and safety micro-sites need to align with the look and feel of the larger TxDOT site. [s1, s2]
- Information that is no longer relevant should be archived and migrated off the site. There needs to be a system in place to make that possible. [s1, s2]

Users

- Although usability testing will be conducted in Austin, hopefully recruits will also come from more rural areas in Williamson County and around Austin. [s2]
- Due to inclement weather in the past few years (hurricanes and winter storms), users living in Austin who are from the gulf coast should be included in study, as well as users who travel in north Texas and are exposed to winter weather. [s2]
- Finding someone who doesn't use computers very often would be beneficial to see whether the website problems are a usability issue or a user problem. [s2]
- The focus of the study should be a balance of task-based scenarios and user-demographic scenarios. [s2]

Content

- Feedback is needed about the Road Conditions section of the website. Some districts are active about adding road information, but all districts muse be engaged in the process. [s2]
- Considering information about roads is fragmented among regions (Transtar in Houston), there should be a system in place that streamlines this information. [s2]
- Website content from divisions is sometimes inaccurate; when web writers ask DDOs to revise the information on their pages, oftentimes no changes are made. [s2]
- Pushing information about drivers' license and auto registration to the TxDOT homepage redirects user traffic to the appropriate site (DPS or DMV) and serves the users' needs, regardless of whether they understand the difference between the agencies. [s2]

Reporting & Analysis

- The most commonly visited page is "404 Page Not Found," indicating that there are many broken links within the site. Dead links should be removed to drive users to relevant and useful information. [s1]
- There are many "Object Moved" pages that rank in the top 15 most viewed pages and exit points. The cause of this issue needs to be reported. [s2]
- Although capturing information about users' screen resolutions, operating systems, and browsers is possible, that data is currently not part of the reporting metrics. [s2]

Competition/Best Practices

- The local regions do a great job updating Facebook and Twitter pages, and the same information should be available on the TxDOT site. [s1]
- Colleges and universities are examples of organizations that have a lot of different programs and departments, but are able to organize information in a meaningful way. We could look at their organizational structure to learn more. [s2]
- Users are coming to TxDOT for specific information, like banking and investment sites, and the content should be divided and presented clearly. [s2]
- Ford.com, BMW, and Amazon are large organizations with many dealers and departments, but everything is organized in one website, and each page looks the same. TxDOT could accomplish the same thing with its departments. [s2]
- The clean, clear look of many financial websites, such as Bank of America and Chase, would be helpful in directing users to the information they need. [s1]
- Websites that provide an accurate search function are the most helpful, and TxDOT's search function can be improved. [s1]

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TxDOT Website Analysis and Evaluation Project

Part 2: User Profiles

Design For Use, LLC

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Melanie — Travel (Personal)

Texas Traveler (Primary 1a)

- Age: 31
- Family Status: Married, two children - ages 5 and 8
- Location: Slaton, Texas
- Education: Bachelor's degree from Texas Tech
- Occupation: Homemaker
- Annual HH Income: $46,000
- Web Experience: Moderate
- Primary Use: Email, banking, social networking, DIY information, shopping
- Favorite Websites: Yahoo mail, Chase, Facebook, Instructables.com, Overstock
- Technical Setup: Desktop used at home, 17" LCD (1024x768), IE, Windows XP, JavaScript and Cookies enabled, Flash and Adobe Acrobat installed
- TxDOT.gov Experience: Melanie has never visited the TxDOT website before, but she is confident it will have the information she needs about traveling conditions on Texas Interstates.

"I would like to plan a route that best accommodates my family's needs."

Profile

Melanie plans to visit her sister in Dallas with her children while her husband, Clint, is away on business. The family has driven to Dallas plenty of times before, but Melanie has never done the six hour trip without Clint. Melanie is especially worried about the road conditions, considering the increased snow and ice storms this winter.

Her children, Bradley and Claire, are highly energetic and easily tire of watching DVDs in the back of their minivan. Therefore, Melanie would like to stop at a rest area every couple of hours to let the children stretch, play, and release some of their energy. Their new family dog, a six month old puppy named Rufus, will also be traveling with them for the first time. Although Rufus is housetrained, Melanie is not sure if his training will transfer to the car as well, which makes rest stops even more essential.

Melanie has also heard about increased police presence on Texas highways, and various safety initiatives that have recently taken effect. Specifically, she wants to make sure that she is complying with state regulations concerning seat-belt safety and child booster seats.

Lastly, she wants to know about the construction on her route in advance. The last time Clint drove the family to Dallas, they ran into construction near Abilene, which added nearly two extra hours to the trip. The children were stir-crazy by the time they arrived at her sister's, which was well past dinner time. Melanie would like to avoid construction this time around.

Melanie's Needs and Goals

- Find alerts on weather and road conditions
- Read updates on traffic and road construction
- Check availability of rest areas
- Keep her children calm and safe throughout the drive
- Confirm compliance with safety regulations

Melanie's Personal Values

- Credibility
- Accuracy
- Predictability

TxDOT can help…

- Communicate current information on construction, high traffic areas, and rest stop maps
- Display alerts from weather websites
- Offer publications and resources for children
- Provide information about safety campaigns
- Send regular updates via email and dynamic message signs (and in the future, potentially send text message updates)

Javier — Natural Disaster

Hurricane Evacuee (Primary 1b)

- Age: 38
- Family Status: Married, two children
- Location: Houston, Texas
- Education: Bachelor's degree, University of Houston
- Occupation: Realtor, Alta Realty
- Annual HH Income: $54,000
- Web Experience: Proficient
- Primary Use: Email, banking, MLS services
- Favorite Websites: Outlook, Wachovia, Zillow, Craigslist
- Technical Setup: Laptop computer used for home and work, 15.5" LCD (1366x768), Firefox, Windows 7, JavaScript and Cookies enabled, Flash and Adobe Acrobat installed. He also uses his Blackberry when he is out of the office.
- TxDOT Experience: Javier is familiar with TxDOT and many state agencies, and he generally looks online to find information about work-related state programs and regulations.

"I need accurate and up-to-date hurricane information to enable well-informed decisions."

Profile

Javier stays busy with his burgeoning career as a realtor in Houston's East End and his role as a devoted family man to his wife and two daughters. Having worked as a realtor in Houston for nearly 15 years, Javier has built his reputation on being able to read his clients and find the right home for them. In addition to being an outstanding businessman, he is a model citizen as well. Javier is always ready to help others with buying a home or planning for the future.

When Hurricane Rita hit the Gulf Coast in 2005, some members of Javier's community were hesitant to evacuate, but Javier encouraged them to do as the Mayor had urged. However, Houston remained largely untouched by Hurricane Rita, and Javier lost some faith in local authorities because he was stuck in a massive traffic jam for over twenty-four hours. The exact opposite happened when Hurricane Ike struck in 2008. Javier did not do enough to convince his community members to leave, considering Rita was still fresh in everyone's minds. Unfortunately, Ike brought severe damage and weeks of power-outages to Houston.

Javier also has an elderly aunt who lives in Angleton, a small town south of Houston near the Gulf Coast. His aunt does not have internet access, and Javier will be responsible for helping her evacuate or finding a shelter for her in the event that the family does not leave.

On the verge of the 2010 hurricane season, Javier wants to arrive at a well-informed decision with his community, rather than rely solely on city and state authorities. He would like to be better prepared to advise people on a course of action. He needs to find trusted resources for up-to-date information about forced-evacuation areas, evacuation routes, and emergency shelters. Naturally, TxDOT will be one of the first websites he visits.

Javier's Needs and Goals

- Familiarize himself on evacuation routes and shelters
- Learn about how the government intends to address contraflow in the future
- Find tips about how to stay safe at his home in the event of a hurricane
- Create a list of supplies to take with the family in the event of an evacuation
- Share information with his community and clients

Javier's Personal Values

- Reliability
- Community
- Sharability

TxDOT can help…

- Provide evacuation routes and shelter locations
- Publish real-time information on road and traffic conditions
- Suggest how to stay safe during an evacuation
- Make information easily accessible and findable

Russell — Travel (Commercial)

Motor Carrier (Primary 1c)

- Age: 50
- Family Status: Married, no children
- Location: Odessa, Texas
- Education: High School diploma
- Occupation: Truck Driver
- Annual HH Income: $38,000
- Web Experience: Moderate
- Primary Use: Road condition updates, email, entertainment
- Favorite Websites: Hotmail, TxDOT, Google maps
- Technical Setup: Desktop computer, 15.6" LCD (1280x1024), IE, Windows XP, Adobe Acrobat installed, dial-up connection.
- TxDOT Experience: Russell has recently started to use the TxDOT site to complete Weight Tolerance Permits and check for approved freight routes through the state.

"Give me real-time information to help me plan the most optimal routes and stay compliant with the state laws."

Profile

Russell worked for Central Freight Lines out of Odessa for nine years before branching out as an independent motor carrier. Becoming self-employed has brought many changes to Russell's daily work, specifically in how he plans his routes, checks road conditions in real time, plans ahead for detours and traffic congestion, checks weather reports, and finds load restricted bridges. When he worked for Central Freight Lines, he would contact the company's receptionist to keep him informed by checking the TxDOT website. Now, Russell plans his trips and checks road and traffic conditions the night before he leaves. From the road, he contacts his wife, Dolores, to access the website in case he needs to change routes or update information.

Aside from some recent changes to the TxDOT website concerning his Motor Carrier Registration and Weight Tolerance Permits, which he must now complete through the Texas DMV, he or Delores can accomplish most of his daily tasks on the TxDOT site.

Additionally, when Russell spends more than several hours behind the wheel, he is required by law to stop driving and rest. Russell prefers to stop at rest areas that have specific amenities, including showers, electricity, and food options. He uses TxDOT to locate rest areas that meet his needs beforehand. When he needs to make an emergency stop, he calls Delores to help him find the nearest rest area.

Considering that neither Delores nor Russell had extensive web experience prior to Russell's self-employment, they have both become more adept at navigating the web and finding information online. Occasionally, Russell will walk Delores through the TxDOT site over the phone to help him find what he needs, but she is learning quickly.

Russell's Needs and Goals

- Identify restricted bridges en route to his destination
- Check traffic and road conditions
- Locate rest areas that meet his needs
- Register for Weight Tolerance Permits

Russell's Personal Values

- Immediacy
- Accuracy
- Convenience

TxDOT can help…

- Complete job-related tasks concerning weight restrictions
- Provide information about safety requirements and road conditions
- Publish real-time information to optimally plan his route
- Display rest area information throughout the state

Doug — Doing Business with TxDOT

Contractor (Primary 1d)

- Age: 37
- Family Status: Married, one child
- Location: San Antonio, Texas
- Education: Bachelor's degree, Texas A&M
- Occupation: General Contractor
- Annual HH Income: $65,000
- Web Experience: Proficient
- Primary Use: Email, banking, work research
- Favorite Websites: Yahoo mail, Wachovia, Construction WebLinks
- Technical Setup: Laptop used for work, 15.6" LCD (1280x1024), Firefox, Windows Vista, JavaScript and Cookies enabled, Flash and Adobe Acrobat installed. Also uses Blackberry on the go.
- TxDOT Experience: Doug downloads forms and checks updates on the TxDOT site to inform his business as a general contractor.

"Make it easy for me and my company to do business with TxDOT."

Profile

The company Doug works for specializes in government contracts, and he has spent the past five years managing TxDOT-specific projects. He is highly motivated, and at 37, already one of the top contractors in the company. He manages a crew of about 30 workers, and tries to balance enforcing safety and legal regulations with keeping a good rapport with his workers. He stays informed about new legislation, construction requirements, and upcoming projects with which he may become involved.

Doug has lived in Texas his whole life. He is an avid camper, hunter, and fisherman, so he knows both the highways and back roads of central Texas very well. He uses TxDOT to learn about town hall meetings that address bridge repair, toll roads, safety initiatives, and community programs.

Doug is currently interested in making a bid on a TxDOT project that will bring in a considerable amount of work and prestige for his company. He is conducting his due diligence to ensure his company is pre-certified for work on the job, and that their insurance is up to date. Additionally, to support TxDOT's Recycled Materials program (and improve his company's likelihood of landing the contract), Doug plans on incorporating recycled asphalt and concrete aggregate into this project. He also wants to find out about the TxDOT payment schedule to ensure he'll receive his outstanding payment from a previous project, as well as sub-contractor information and standards.

Doug's Needs and Goals

- Check the status of his company's pre-certification and insurance
- Learn about using recycled materials in construction
- Search for and download project plans online
- Find out about the TxDOT payment schedule
- Access information about sub-contracting standards and requirements
- Confirm that his crew members are eligible to work on the project

Doug's Personal Values

- Professionalism
- Recognition
- Efficiency

TxDOT can help…

- Keep his company's certification and insurance current
- Provide information about recycled materials and other building codes
- Display the projects available for bids
- Post information about payments
- Provide clear information about sub-contracting requirements and employment databases

Evelyn — Public Involvement

Concerned Citizen (Primary 1e)

- Age: 68
- Family Status: Widowed, 4 children, 14 grandchildren
- Location: Garrison, Texas
- Education: High school diploma
- Occupation: Retired farmer
- Annual HH Income: $26,000
- Web Experience: Low
- Primary Use: Information, research
- Favorite Websites: Social Security online, medicare.gov
- Technical Setup: Desktop used at the library,15.5" LCD (1280x1024), IE, Windows XP, Adobe Acrobat installed
- TxDOT Experience: Evelyn is concerned about how potential construction on US-59 will impact her family's property and lifestyle

"I need to find out how TxDOT's new construction project will affect my land and lifestyle."

Profile

Evelyn's family has owned the farm she lives on for over 75 years. Her youngest son, Ed, does most of the farm work now with several hired men, and Evelyn helps with smaller tasks and maintenance. The farm doesn't bring in a lot of money, but it's her family's only remaining legacy. Even when times were tough after her husband passed away, Evelyn refused to sell the land or build on it. Her children live in neighboring Nacogdoches and Appleby, and her grandchildren come out to the farm at least once a month for family picnics and special occasions.

Recently, Evelyn heard from her neighbors that a new construction project on a nearby highway will affect their lands and lifestyle. Her farm is just off of US-59, and she is concerned that the construction for the new I-69 project may impinge on her land, or the resulting congestion will be an annoyance to her and her family.

She is determined to keep her family's land intact, and she will not let her property go without a fight. Evelyn heard that TxDOT tried to acquire private lands for the Trans Texas Corridor, and she hopes her community will react appropriately to stop the expansion of US-59 if the threat should prove true.

However, Evelyn knows that her neighbors tend to exaggerate, so she wants to make sure she has her facts straight, especially before she passes on the news herself. She also wants to speak with someone personally about the matter, so she's interested in learning whether TxDOT has any public meetings scheduled in the coming weeks in her area. Considering Ed is busy working all day, Evelyn plans to go to the library and do some research.

Evelyn's Needs and Goals

- Locate project information about US-59
- Find out when the next local meeting will be
- Share information with her community

Evelyn's Personal Values

- Reliability
- Honesty
- Respect

TxDOT can help…

- Provide detailed information about the project plan
- Pay special attention to how people in the area will be impacted by the plan
- Post a schedule upcoming meetings in her area

Jill — Law Maker

State Legislator (Primary 1f)

- Age: 50
- Family Status: Married, 3 children, 2 grandchildren
- Location: Richmond, Texas
- Education: Bachelor's Degree, Doctor of Jurisprudence
- Occupation: Attorney/State Legislator
- Annual HH Income: $118,000
- Web Experience: Proficient
- Primary Use: News, research, constituent information
- Favorite Websites: Westlaw, house.state.tx.us, Gmail, Twitter
- Technical Setup: Desktop used at the library,15.5" LCD (1280x1024), IE, Windows XP, Adobe Acrobat installed
- TxDOT Experience: Jill uses the TxDOT website to stay informed and find project and program information for constituents in her district. Her staff is becoming more familiar with the TxDOT website so when constituents call Jill's office for information, her staff can find the necessary information.

"I need up-to-date, easy to find project information so my constituents are aware of construction projects in their town."

Profile

Jill works as an attorney in her hometown of Richmond and also serves as a state legislator in the Texas House. With the passage of the American Recovery and Reinvestment Act, there were a number of projects that got underway quickly in her area, and she would like to notify her constituents about the construction. She used TxDOT Project Tracker to find these projects so she would know how construction in her district was funded. She also used this tool to find proposed projects that are currently unfunded. During the interim, Jill spends most of her time in her district, but she still wants to stay informed of the Texas Transportation Commission's activities. She uses the TxDOT website to view Commission meeting agendas in her district when they are posted, and she also watches the Commission meetings from www.txdot.gov.

Jill makes sure that her office staff can help constituents find information about obtaining Memorial Sign applications, state highway maps or finding Travel Information Centers and Safety Rest Areas. Schools in her district have been interested in applying for the Safe Routes to Schools program, so Jill was sure to direct school administrators to the appropriate place on TxDOT's website for the application and information.

With TxDOT's increased public meetings involving several transportation plans, Jill has used the TxDOT website to research TxDOT's draft plans and inform her constituents via her Twitter page of upcoming TxDOT public or town hall meetings. Jill uses her constituent newsletter to inform her district in a more detailed manner about TxDOT's various plans and inform constituents on their opportunity to provide public comment.

Jill's Needs and Goals

- Find information on projects under construction in her district
- View Commission agendas and watch Commission meetings online
- Guide her constituents to TxDOT program webpages
- Stay updated about TxDOT public involvement activities so she can notify her constituents

Jill's Personal Values

- Accuracy
- Sharability
- Community

TxDOT can help…

- Communicate up-to-date information on projects and how they are funded
- Offer publications such as state highway maps for her constituents
- Provide information on how to offer public comment on TxDOT programs
- Communicate public meeting and town hall information
- Display locations of rest areas and travel centers throughout the state

Nicki — Driver License and Registration

New Texas Driver (Secondary 2a)

- Age: 22
- Family Status: Single
- Location: Fort Worth, Texas
- Education: Bachelor's degree, University of Oklahoma
- Occupation: Events coordinator
- Annual HH Income: $29,000
- Web Experience: Proficient
- Primary Use: Email, banking, social networking, entertainment
- Favorite Websites: Gmail, Chase, Facebook, Hulu
- Technical Setup: Desktop used at work, 21" LCD (1920x1200), IE, Windows 7, JavaScript and Cookies enabled, Flash and Adobe Acrobat installed
- TxDOT Experience: Nicki is new to Texas and has never used the TxDOT site before.

"I need to change my driver license and car registration as soon as possible, without taking much time off from work."

Profile

Nicki is excited about her recent move from Broken Arrow to Fort Worth. She is going to work at one of the top events management companies in Texas, and she views her move as her break into "big city life." Nicki will undoubtedly miss her family and friends, but takes solace in the fact that her home is only a few hours away.

Along with the excitement of relocating comes anxiety about adapting to life in a new place. Nicki has had to find a new bank, change her mailing address on all credit cards, set up utilities, get a new phone number, find new health care providers, and learn to navigate a new city. By the time she finishes plowing through her to-dos, her coworker informs her that she only has a week left before her 30-day new-resident period expires. She is legally obligated to transfer her driver license and registration to Texas by the end of next week. She will now need to scramble to accomplish these tasks over the coming days. At the advice of her coworker, she goes to the TxDOT website to find out more information.

Nicki not only needs to figure out how and where to get a new license and registration, she is also worried about missing work to do so. She wants to reach each department as early as possible with all of her required documents, so that it won't take her more than half a day to accomplish these tasks. She is aware of how confusing it can be to navigate the various state agencies online, and she needs to find the relevant information quickly.

Nicki's Needs and Goals

- Find information on getting a Texas driver license and plates
- Locate the driver license bureau and automobile registration site
- Determine when to take off work to fulfill these tasks

Nicki's Personal Values

- Efficiency
- Helpfulness
- Clarity

TxDOT can help…

- Present clear links to the appropriate information on the DPS and DMV sites as well as the county tax office.
- Provide an easy portal and seamless transition to the third-party sites

Chaz — Auto Dealer

Drivers and Vehicles (Secondary 2b)

- Age: 45
- Family Status: Divorced, two teenage sons
- Location: Corpus Christi, Texas
- Education: Bachelor's degree, University of Houston
- Occupation: Used car dealer
- Annual HH Income: $62,000
- Web Experience: Moderate
- Primary Use: Email, banking, business research
- Favorite Websites: Outlook, E*TRADE, Kelly Blue Book, NADA, Craigslist, KBB.com
- Technical Setup: Desktop used at work, 17" LCD (1024x768), IE, Windows XP Professional, JavaScript and Cookies enabled, Flash and Adobe Acrobat installed
- TxDOT Experience: Having worked as a used car salesman for nearly 20 years in Texas, Chaz uses the TxDOT website for business transactions, and he encourages his assistant salesmen to do the same.

"I would like to complete paperwork for my car sales and comply with state regulations."

Profile

Chaz owns one of the most reputed used car lots in Corpus Christi, and has been in this business for over 20 years. He learned the legal responsibilities of a car dealer the hard way as an assistant salesman at his uncle's lot before starting on his own. State guidelines were not always followed and paperwork was not completed properly, which created a logistical and financial mess for his uncle. When Chaz opened his own lot, he vowed to abide by the legal guidelines to the letter.

He has long used the SPV calculator on the TxDOT site to help determine car values and sale prices, and stays up to date on any legislation changes on car sales in Texas. A few months ago, he was redirected to the Texas Department of Motor Vehicles (DMV) for SPV calculation, rather than staying within the TxDOT site, which is bookmarked in his browser. Chaz has since continued to use his old bookmark, which redirects him to the DMV site. He is uncertain as to why the change was made, or how the DMV and TxDOT are related.

Chaz takes professional education seriously; much like his uncle did for him. As such, Chaz empowers his assistant salesmen to act as independently as possible. He expects them to know how to accurately complete legal paperwork available on the TxDOT site. As a result, Chaz hasn't personally been on the TxDOT website in several months now. With one of his top salesmen out sick this week, Chaz is confronted with the duties he generally delegates to his employees.

Needs/Goals

- Complete a Vehicle Transfer Notification (VTN) form
- Check the SPV of a recent auto acquisition
- Easily follow state guidelines and regulations
- Keep his business up to date and current

Chaz's Personal Values

- Predictability
- Consistency
- Knowledge

TxDOT can help…

- Direct him to the Vehicle Transfer Notification form
- Execute a seamless transfer to the DMV site
- Provide information about state guidelines and regulations

Part 3: User Journeys

user profile / scenario / user flow

31 yrs Married, Two children $46,000

HighSchool | Bachelors | Masters

Web Experience

"I would like to plan a route that best accommodates my family's needs."

Melanie plans to visit her sister in Dallas with her children while her husband, Clint, is away on business. She is worried about the road conditions, construction, and managing her highly energetic children. She would like to stop at rest areas occasionally to let the children and their new puppy release some of their energy. She also wants to make sure to comply with state regulations concerning seat-belt safety and child booster seats.

Searches on Google

Melanie Googles "road conditions north Texas" and several pages of results are displayed, all of which are on the TxDOT domain. She clicks on the first link, "Road Conditions" and is taken to a page that appears to have the relevant information.

Views Road Conditions Options

Melanie is relieved to find that she can look for a variety of road conditions from this page, including closures, construction and damages. She selects "Construction" first to view where she may be delayed on her route. The next drop-down box for Texas counties deters Melanie, due to her unfamiliarity with the counties on her route. Luckily, the final drop-down box also lists the conditions by road-way. She selects US-84 and clicks on "Submit."

Views US-84 Conditions

Melanie scrolls through the list of areas where US-84 is under construction. The only area that interferes with her route is outside of Lubbock. Considering she lives a few miles south of Lubbock, she won't be affected by the construction. Using the same process, she continues to look for construction and closures on the rest of her route.

Checks for Traffic Updates

Melanie now wants to find out about traffic congestion on her route. She selects "Maps and Routes" in the local navigation, then clicks on "Traffic Maps." She finds a report of annual traffic patterns, which is not specific enough for her current needs, so she searches for "traffic Abilene" in the search box on top of the page. The search results display a link to local Twitter feeds, providing real-time feeds for traffic in both Abilene and Dallas.

Finds Rest Areas

Melanie now needs to find a map of Rest Areas along her route. She returns to the TxDOT home page to click on the "Travel" page, which she viewed before. She locates the "Travel by Land" link in the navigation and then clicks on "Safety Rest Area Map." She clicks on one of the rest areas on her route to view pictures of the rest area and information about restrooms, food, and internet access.

Learns About New Safety Campaigns

Melanie wants to comply with the new child safety laws, specifically about the regulations on children's booster seats. She clicks on the "Safety" link from the global navigation and is taken to a list of public awareness programs for a variety of campaigns. She easily finds information about child passenger safety.

38 yrs Married, Two children $54,000

HighSchool | Bachelors | Masters

Web Experience

"I need accurate and up-to-date hurricane information to enable well-informed decisions."

Javier is a busy man balancing a successful career as a realtor in Houston's East End with his role as a devoted family man to his wife and two children. As a model citizen, Javier is always ready to help others with buying a home or planning for the future. On the verge of the 2010 hurricane season, he wants to arrive at a well-informed emergency plan for his family, community and his aunt in Angleton, rather than rely solely on city and state authorities. He needs to find trusted resources about forced-evacuation areas, evacuation routes, and emergency shelters.

Navigates to TxDOT

Javier wants to review multiple resources to arrive at a comprehensive hurricane plan for his family, friends, clients and his aunt. During Hurricane Rita and Ike, he used TxDOT's site to view evacuation areas and shelter routes. He knows that TxDOT will have most of the information he needs, so he starts there.

Looks for Evacuation Map

Considering the Gulf is not yet threatened by a hurricane, there is no information on the TxDOT homepage (as expected). Javier clicks on the "Travel" option from the global navigation menu and finds a link for "Hurricane Information." The page displays Hurricane Evacuation maps for each area of the Gulf Coast, and Javier downloads and prints Houston's evacuation map.

Reviews Contraflow Policy

Javier notices that some of the evacuation routes are designated as "Potential Contraflow" areas. Javier recalls during Hurricane Rita, the contraflow routes were not initiated until 48 hours after the state mandated the evacuation. He wants to know how long it will take the next time an evacuation is necessary. Luckily, a link for "Hurricane Evacuation Roadway Contraflow Brochures" answers his concerns.

Reads Safety Tips

Below the information about evacuation routes are safety tips for assembling survival kits in the event that his family does not evacuate. He prints this page itself to purchase all items necessary for the kit.

Locates Houston Area Shelters

Again, as expected, there is currently no information on the site about specific shelter locations in and around Houston. However, there is information about whom to contact for evacuation assistance, which will be helpful in finding a place for his elderly aunt to stay near Angleton.

Shares Information

From the Hurricane Information page, he finds the link to various TxDOT Twitter pages. He begins following the Houston TxDOT Twitter feed, and plans to re-Tweet any relevant information about hurricane preparedness. He shares the link for evacuation maps and the Hurricane Information page by emailing his family and friends.

50 yrs Married, No children $38,000

HighSchool | Bachelors | Masters

Web Experience

"Give me real-time information to help me plan the most optimal routes and stay compliant with state laws."

Ever since becoming an independent driver, Russell is responsible for planning his trips, checking road and traffic conditions, researching rest stops, and staying abreast of new legislation via TxDOT's website. From the road, he contacts his wife, Dolores, to access the website in case he needs to change routes or update information. Aside from completing his Motor Carrier Registration through the Texas DMV, he or Delores can accomplish most tasks on the TxDOT site.

Navigates to TxDOT

Russell has a long drive beginning tomorrow, and he needs to plan his route from Midland, Texas to Little Rock, Arkansas. He clicks on the TxDOT link from his bookmarks, and he is taken directly to the "Motor Carrier" section of the site.

Identifies Load Restricted Bridges

Russell has a good idea of which interstates he'll take on his trip, but wants to verify that there are no load restricted bridges on the route. From the "Motor Carrier" page, he highlights "Roadways" and selects "Load Restricted Bridges." He selects each county he'll visit on his drive and verifies that his route doesn't intersect any of the listed bridges.

Checks Road Conditions

Construction is a common annoyance for Russell, so he navigates back to the "Roadways" page and selects "Road Conditions" from the menu. He searches for closures, constructions, and damages on each of the major Texas highways he'll travel during this haul. He reroutes his course around the Dallas/Fort Worth based on the new information he's learned from TxDOT.

Locates Rest Areas

Russell is required by law to take a break from driving every ten hours. He clicks on the "Travel" link and selects for the "Safety Rest Areas" page. After viewing the map, he chooses rest areas that are approximately nine to ten hours apart. One of the rest areas did not have food options, so he'll have to stop after six hours instead to make sure he can eat before getting back on the road.

Registers for Weight Tolerance Permits

Russell's final task is to register for Weight Tolerance Permits. The load he'll be carrying is beyond the legal weight limit, so he must file a permit to complete his drive. He selects "Oversize and Overweight" permits from the left navigation menu and follows the link for "Online Permits." He logs in with his motor carrier ID to complete the registration process.

Bookmarks TxDOT Pages

While he is on the road, Russell will be in touch with his wife Delores for updates on traffic delays, accidents, or emergency road conditions. Considering she isn't as adept at using the computer as he is, he bookmarks all the relevant pages for – Road Conditions, Rest Areas, and Permits.

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Design For Use

Part 3: User Journeys

user profile / scenario / user flow

37 yrs Married, One child $65,000

HighSchool | Bachelors | Masters

Web Experience

"Make it easy for me and my company to do business with TxDOT."

As a general contractor, Doug specializes in government contracts and has worked extensively with TxDOT over the past five years. He is interested in making a bid on a TxDOT project for his company, and needs to confirm that his company is pre-qualified and has the correct insurance to complete the work. To improve his company's chance of landing the project, he wants to learn more about TxDOT's Recycled Materials program. He also needs to confirm payment receipt from a previous project.

Navigates to TxDOT

Doug is already familiar with the TxDOT site due to his previous contract work. He needs to find information that will enable his company to apply for a new project. He clicks on the "Doing Business with TxDOT" link from the homepage and selects "Consultants/Contractors."

Finds Plans Online

Doug goes directly to the "Plans Online" link under the "Consultants/Contractors" menu. He is directed to a page called TxDOT Expressway that allows him to browse plans and read information to create a bid. Under "State Let Constructions Projects" he selects the link for June proposals and looks for projects in Bexar County. Doug finds a project that is a good fit for his company..

Verifies Insurance Information

Now, he wants to make sure his company has the appropriate insurance and is pre-qualified for the job. From the "Consultants/Contractors" menu, Doug selects "Contractor Information" and clicks on "Contractor Insurance Requirements." He downloads Form 1560 because the project requires heightened insurance policies and endorsements.

Verifies Pre-Qualification

He goes back to the "Consultants/Contractors" menu and selects "Pre-qualification." Doug isn't sure whether his company will need Full Pre-qualification, or if completing a Bidder's Questionnaire will suffice. The page explains how to determine Pre-qualification criteria, and Doug decides he will indeed need full prequalification. He downloads the form for completion.

Learns about Recycled Material Program

Doug thinks his company has a better chance of winning the bid for the project if they use recycled materials for the roadway. He knows TxDOT has a Recycled Materials program, so under the "Consultants/Contractors" menu, he selects "Materials Information." A list of links relating to recycled materials appears, and he selects "Asphalt Materials and Uses."

Views TxDOT Payment Information

His company recently completed a project with TxDOT, but to his knowledge they have not yet received the final payment. Doug needs to find out whether the payment has been initiated. From the "Doing Business" menu item and he clicks "Payment and Claims." He navigates to the "Window on State Government" site where he can login to view payment history.

68 yrs $26,000

HighSchool | Bachelors | Masters

Web Experience

"I need to find out how TxDOT's new construction project will affect my land and lifestyle."

Evelyn has heard rumors that the I-69 TxDOT project may infringe on her family farm in Nacogdoches county that is adjacent to the highway. The farm has been in her family for over 170 years, and she wants to maintain her land and legacy. She goes to the TxDOT website to verify the veracity of the rumors and to learn about her rights as a landowner.

Navigates to TxDOT

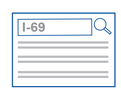
Eveyln is aware that TxDOT is the agency dealing with the I-59 expansion into the I-69 corridor, so she types "TxDOT" into the search box at the top of her browser window. She selects the link that says "Texas Department of Transportation Homepage."

Browses for Project Information

On the homepage, Evelyn sees a lot of links and navigation options. She's unsure where to start, so she clicks on the Texas map where Nacogdoches County is located. She then selects Nacogdoches county from the dropdown. She clicks on "Local Projects" link on the new page. She finds additional links to "Construction Projects," which takes her to the "Project Tracker." The only construction project displayed for US 59 pertains to road resurfacing.

Searches for Project Information

Thinking she couldn't what she was looking for, Evelyn returns to the homepage and types "I-69 construction" into the search box at the top of the page. She selects the first search result called "I-69 Information."



Learns about the I-69 Project

Evelyn clicks on the link to learn more about the I-69 project, and is taken to a new page with a link called "What are we doing?" The page highlights the broad reasons for highway improvement, but she wants to know about how this will impact her rights as a land owner. She tries the "How will this affect me?" link, and is presented with more generalized information.

Finds TxDOT's Contact Information

She clicks on the "Question and Comments" link, hoping that she will be able to get in contact with someone who can answer her specific questions. She selects the link for the "Contact Us Form" and pulls down the drop down box to find the phone number she needs for the Lufkin district. She writes the number down in her address book.

Checks the Public Hearing Schedule

Although she has the phone number for the Lufkin district, she would rather talk to someone in person. She returns to the I-69 page and clicks on the link for "Events and Public Hearings," and is asked to navigate back to the TxDOT page again. She clicks on "Town Hall Meetings" and sees there is a public meeting scheduled in a few weeks in Tyler. She decides to attend that meeting to voice her concerns.

50 yrs Married, 3 children $118,000

High school | Bachelors | Masters

Web Experience

"I need up-to-date, easy to find project information so my constituents are aware of construction projects in their town."

When Jill became a state legislator, she realized transportation projects are important to her constituents. Jill needs to stay informed on transportation projects in her district as well as Commission agendas and activities. She also needs to be able to inform her constituents of TxDOT programs and public involvement activities. She uses the TxDOT website to find information on various TxDOT programs, meetings and schedules.

Navigates to TxDOT

Jill needs to tell a constituent how to apply for a Memorial Sign. Jill navigates to TxDOT.gov and types "memorial sign" in the search box. From there she navigates to the search results and chooses the "Highway Memorial Sign Program"

link.

Learns about Memorial Sign Program

Jill reads the information about who is eligible for memorial signs and how to apply for such signs. Jill clicks on the "Public Outreach" link, which takes her to a "Publications for Kids" page. Though this can be useful to Jill for school groups, it is not the public involvement/public comment section she was looking for, so she hits the back button on her browser that takes her back to the Memorials Signs page.

Discovers how to Provide Public Comment

From the Memorial Signs page Jill uses the "Public Involvement" link to find information about public and town hall meetings and opportunities for public comment so her constituents can be more involved. She sees several opportunities under both town hall meetings and public forums. Under the "Hearings & Meetings" section, Jill finds the links information on how to provide public comment on various programs. She sees there is a form her constituents can complete if they need to provide public comment.

Researches Commission Meeting schedule

While on the "Request for Public Comment" webpage, Jill notices the "Commission Meeting Schedule" and goes to that link so she can check for the most recent Commission agenda. Jill finds the PDF of the Commission agenda and remembers she needs to check on the status of a project in her area.

Searches for Projects in Project Tracker

From the Commission Meetings page, Jill selects the "Projects" link at the top of the page which takes her to a new page listing "Project Information." On this page Jill notices the "Project Tracker" link which she selects and "Comes on In." On the "Project Tracker" page, she selects the search function to search her legislative district.

Shares Information

Before logging off, Jill sends out a Tweet about a road resurfacing project and a reminder to slow down in work zones.

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TxDOT Website Analysis and Evaluation Project

Part 4: Website Audit

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Executive Summary

A site audit, or heuristic evaluation, is a key step towards assessing the effectiveness of the Texas Department of Transportation's (TxDOT) website. After a successful understanding of the stakeholder vision, definition of personas (user profiles), identification of common user tasks, and an analysis of web usage logs, this exercise underscores those insights by offering an in-depth analysis of the existing website.

Using the guidelines developed by Jakob Nielsen, two industry experts assumed the role of the identified profiles to conduct a detailed walk-through of the key pages of www.txdot.gov (according to the web logs), along with a brief comparison with the websites of California and New York City Department of Transportation. The organizational vision was also kept in mind while doing this walkthrough, which included: creating an information resource with great user experience, significantly increasing online usage, and reducing support costs.

This evaluation is intended to identify strengths and weaknesses of the site from a designer's perspective. These findings coupled with actual usability testing results should give a fair idea of the efficacy of the website.

Key findings were documented with a description and severity rating to prioritize the needs of the site, and where possible, recommendations were proposed to address prominent issues.

Overall, the TxDOT website contains an extraordinary amount of information. The site is organized in a very information-centric manner, instead of being task focused. Therefore, the site is largely usable but not entirely efficient in completing common of tasks.

While a user familiar with the site may be able to navigate to the appropriate page easily, new users may require more effort in navigating the site. The categorization on the site needs to be put in an actionable format rather than the directory-like format of listing links and information. Refreshing the visual design of the site will also better communicate the TXDOT brand, along with giving it a contemporary look.

Priority Ratings

Each problem or issue that was identified has been given a rating by the evaluators in order to help prioritize further changes and updates to the websites. The ratings are given on a scale of one to four as follows:

[!] A problem that should be addressed immediately

[1] A major problem that should be fixed

[2] A problem that could cause some user confusion or dissatisfaction

[3] A minor or aesthetic problem

[#] Items in gray text indicate issues that were found on multiple pages

[R] A strategic recommendation that will considerably enhance user satisfaction

[-] An observation that may require further investigation

[+] Positive observation

Top Findings

Website Strengths

[+] The Search Engine Optimization (SEO) keyword strategy seems to be sound.

[+] Time has clearly been taken to categorize and compartmentalize the information on the site.

[+] The navigation menus and link names generally align with page titles.

Information Architecture

[1] The site serves partly as a portal to other state agencies and partly as a resource for users with TxDOT-specific questions. The homepage (and additional content pages) should be organized by common tasks rather than subject or content-types.

[1] There is no clear call to action (completing common tasks or answering FAQs) on most pages, and instead a list of links is displayed in the main content area, which duplicates the links already present on the local navigation menu.

[1] The left navigation menu is overloaded and holds as many as 1,000 links. The number of links found on the left menu should not exceed 100.

[1] Links to third-party sites should be marked consistently with icons, as they will take users away from the site.

Visual Design

[1] The excessive use of drop-downs in the local navigation menu is somewhat confusing and hard to maneuver. When selecting a page that can be seen under more than one section, the previous navigation labels are lost. (From the "Public Involvement" page, if a user selects "Texas Transportation Commission," they are taken to the "About Us" page and the "Public Involvement" navigation menu disappears).

[1] "TxDOT Expressway" is an outdated page, and it does not have the same visual design as the other TxDOT pages.

[1] With the exception of the homepage, the look and feel of the site — graphical elements, page layout, and colors — should be made more contemporary.

[1] Using graphical elements and including sub-headings within text, would enable users to scan the content more easily.

Functionality

[!] The website should be designed for a default resolution of 1024x768 pixels, and should degrade gracefully at lower resolutions. As a user expands their screen, the content should fill more of the screen (an example and further explanation of this can be found at: http://www.w3.org/TR/WCAG-TECHS/G146.html)

[1] Important tasks require 2-4 clicks to find appropriate forms. There is often an "information" page before a user is presented with the form or action they need, which can be added to the form page. (For example, Project Tracker has an unnecessary information page)

[1] Many of the forms and informational pages contained within TxDOT are PDFs, which are hard to access, update, and search for. Migrating these to html pages would improve the accessibility of these pages.

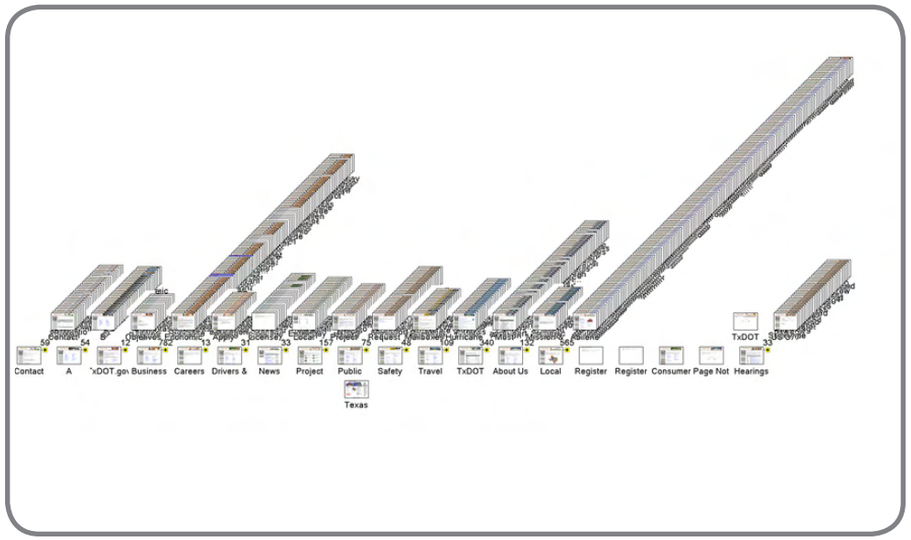
Help and Documentation

[!] Investing in a good content management system (CMS) will considerably ease maintenance of the site.

[1] There is no online "help" section to speak of other than an FAQ section and contact form. Considering the breadth and depth of this site, there should be online help support in place, especially to guide filling complex forms.

[1] A comprehensive social networking strategy for Facebook, Twitter and other outlets should be continued. Twitter accounts exist for local districts, but they should be made more prominent.

Sitemap (Isometric)

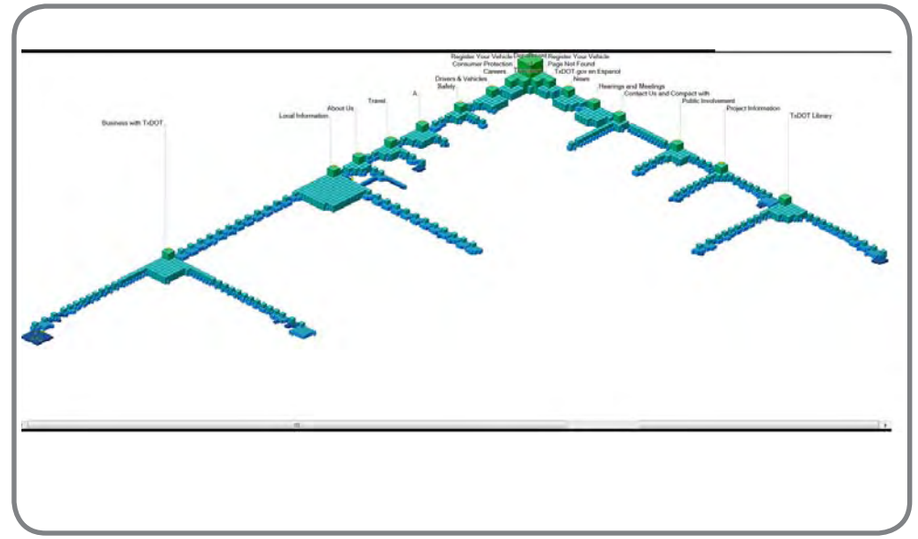


Website Statistics*

*Statistics according to SortSite software, June 30, 2010

- Total number of pages tracked (as a sample of the larger site): 3937
- Total number of links to other sites: 1047
- Number of PDFs: 499
- Broken links: 233
- Pages with 501 accessibility issues, (which would be hard to access for users with vision, mobility, and hearing impairments): 242
- Pages not compliant with W3C standards (missing alt text and header tags, among other things, make it difficult for screen readers to properly parse and render content): 581.
- Pages with cross-browser compatibility issues (page renders itself differently depending on the browser: Internet Explorer, Firefox, Safari, etc): 84

Sitemap (Skyscraper)



Observations

- The site is extensively broad and deep. The categorization schema should be validated with a card sort exercise, which may help reclassify outlying information narrow the breadth of the site.
- Conducting a content inventory is another useful exercise that could combine pages and discard less useful ones.
- There are many broken links leading to 404s on the site. They should be identified and fixed immediately.
- Browsing the site alone cannot reveal all the information, especially if it is rarely accessed. The search function within the TxDOT site needs to be made more robust by using filtering mechanisms and optimizing indexing.

Global-level Findings

Information Architecture

[!] No tasks are currently available from the homepage; only by clicking thru to subsequent pages do tasks appear. For example, the user must navigate through "Home > Business > Doing Business > Selling to TxDOT" before a task or form is available.

[!] Most category pages look like a directory of links, duplicated from the local navigation menu. The main content area should be used for more contextual information, such as common tasks, FAQs, or popular forms.

[1] Third-party sites are inconsistent in execution. Only when exiting to Texas DMV, DPS, or Twitter feeds is the user asked to confirm the action, which may be unnecessarily obtrusive.

[2] The global navigation changes from the home page to other pages. "Contact Us" is replaced with "Local Information." Globally persistent links should remain constant throughout the site.

[2] The site is exceedingly broad and deep, covering a large amount of information. As a result, many content pages contain an excessive number of links, which is overwhelming for the user.

[2] Most of the local navigation menus on content pages do not seem to be organized in any specific order.

[3] When selecting a 3rd level page from the local navigation menu, only the menu heading becomes highlighted, and not the actual link within it. For example, when selecting "Travel > Travel by Land > Rest Areas" only "Travel by Land" is highlighted, rather than "Rest Areas."

[4] Some of the local navigation menus contain only one content page (Rail, Aviation) and their drop-down lists have only a single item. There should be a way to balance the display.

[+] Time has clearly been taken to compartmentalize and categorize this site.

Global-level Findings, Cont'd

Visual Design

[1] The homepage is visually distinct (more aesthetically pleasing) than the rest of the site. For instance, the menu options on the content pages follow a pattern of burgundy, beige, and gray background colors, but the homepage follows a more neutral color scheme with gray and white.

[2] The icons and graphics used throughout the site should have a similar look and feel.

[3] Clicking on the main headings in the local navigation menu only reveals its sub-headings, rather than changing the information in the main content area.

[+] The logo and pictures that appear at the top of each page are consistent with the branding, and the images usually align with the content-matter of each page.

Language and Content

[2] Most TxDOT projects are internally named, and users may not be familiar with these labels. ("Vision 21" under Motor Vehicle Dealers, "Prop12" on the home page).

[3] Dialogues are text-heavy and would benefit from supporting images where applicable.

[+] Navigation labels and page titles are consistent.

Functionality

[!] The website should be designed for a default resolution of 1024x768 pixels, and should degrade gracefully at lower resolutions. As a user expands their screen, the content should fill more of the screen (an example and further explanation of this can be found at: http://www.w3.org/TR/WCAG-TECHS/G146.html)

[!] Maintaining such an extensive site requires a sophisticated content management system (CMS). It will help distribute maintenance of the site more efficiently, remove broken links and expired pages and switch to new templates easily.

[1] Online forms and reports are accessible only in PDF. The site would be more accessible and easy to update if PDFs were used only for multi-page reports.

[1] The mechanism for exiting to third-party sites is inconsistently followed. Sometimes the user is asked to confirm their exit from TxDOT, and sometimes no confirmation is necessary.

[2] The search box should be consistently placed at top right corner of the site.

[2] When exiting to a third-party site, a new window opens, which is cumbersome for the user because it disables the "back" button of the browser.

[R] A comprehensive social networking strategy for Facebook, Twitter and other outlets should be continued. Twitter accounts exist for local districts, but they should be made more prominent.

Help and Documentation

[!] There is no “help” section to speak of other than an FAQ section and contact form. Considering the breadth and depth of this site, there should be an online help strategy in place, especially to guide filling complex forms.

[1] The “How do I…” box in the top right of the homepage provides helpful action-oriented tasks, but may get obscured by the content-heavy home page.

Error Recovery

[+] Error messages generally appear in clear and user-friendly language.

[+] The error message references the problem with the same language used on the form or webpage that delivered the error so it can be recovered.

Accessibility (not in scope)

[2] Based on website statistics run by Sort Site, not all pages meet Section 508 standards for accessibility.

[2] Sort Site also found that not all of the pages are WC3 compliant.

[3] Resizing the text should be a global option on all pages.

Search Engine Optimization

[+] When using common search terms such as “Texas transportation, Texas road, Texas road safety, Texas drivers” the TxDOT site was within the first 5 search results.

[+] Metadata on most pages is exhaustive and aligns with the information covered on that page, as well as the larger TxDOT mission.

Page-level Findings

Home

[!] The homepage should be organized by tasks or actions, rather than a directory of links. Making the options under the "How do I…" drop down menu a more integral part of this page could offer concrete starting points for users. (A)

[!] The user goal appears to be "find information on _____ topic." Action-oriented wordings of tasks like "How do I register my Vehicle" or "Find Traffic Alerts" would be more helpful.

[1] Third-party sites under "Quick Links" should be marked explicitly, as they will take users away from the site. (C)

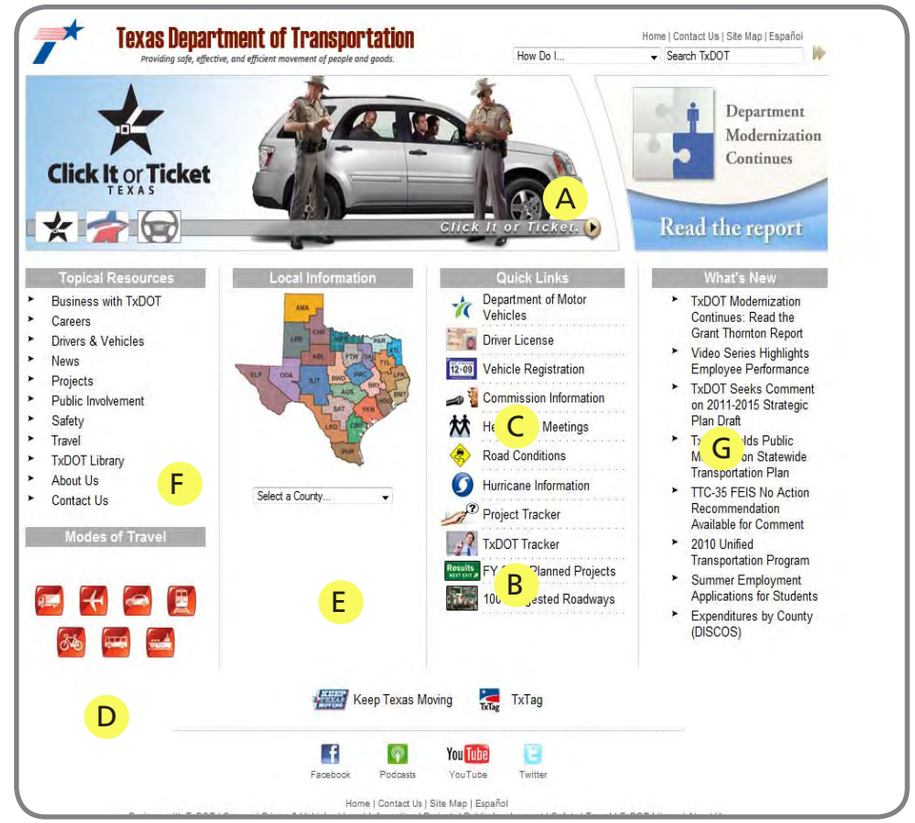
[2] The hyperlinks should be treated differently than plain text, and a hover effect for links would reinforce clickability. For example, the linked and static text under "Quick Links" looks identical. (B)

[3] The icons under "Modes of Travel" are obvious, but their purpose is not always clear. The user needs more context about what is contained behind these links. (D)

[3] The graphical elements next to the "Quick Links" add an aesthetic element to the page, but do little to clarify the information found behind each of those links. (E)

[3] The map of Texas appears to be static and not interactive. Making it larger with a hover effect on each district is recommended. (F)

[3] The "What's New" section occupies real estate disproportionate to its usefulness. It can be made smaller with a link to more updates. (G)



Home, Continued

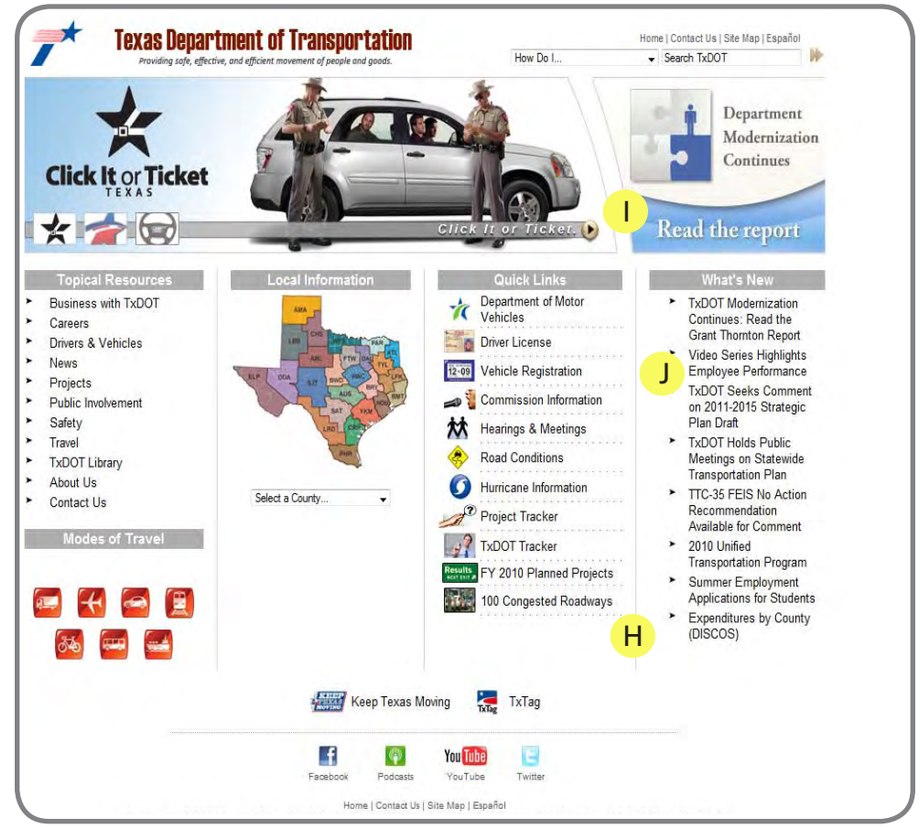
[3] There is a dependence on acronyms under the "What's New" section (TTC-35 FEIS, DISCOS). Explanations for these terms should be provided. (H)

[3] The search box should be more prominent on the homepage, considering the extensiveness of this site and the users' dependence on search. (I)

[4] There is no clear time stamp for when the last update was applied to the page. However, the dates on each News topic are from 2010, which is a good start.

[4] The four-column page layout is not an efficient use of space, nor does it lend itself well to separating more important content from less important information. The map and "What's New" section could be pushed to the right hand side of the page, while the main content area could be made wider to focus on important user tasks. (J)

[+] The homepage is structured in an up-to-date and aesthetically pleasing way.



Business with TxDOT

[!] The main content page duplicates links already available in the local navigation. The main content area should highlight common tasks, FAQs, or popular forms. (A)

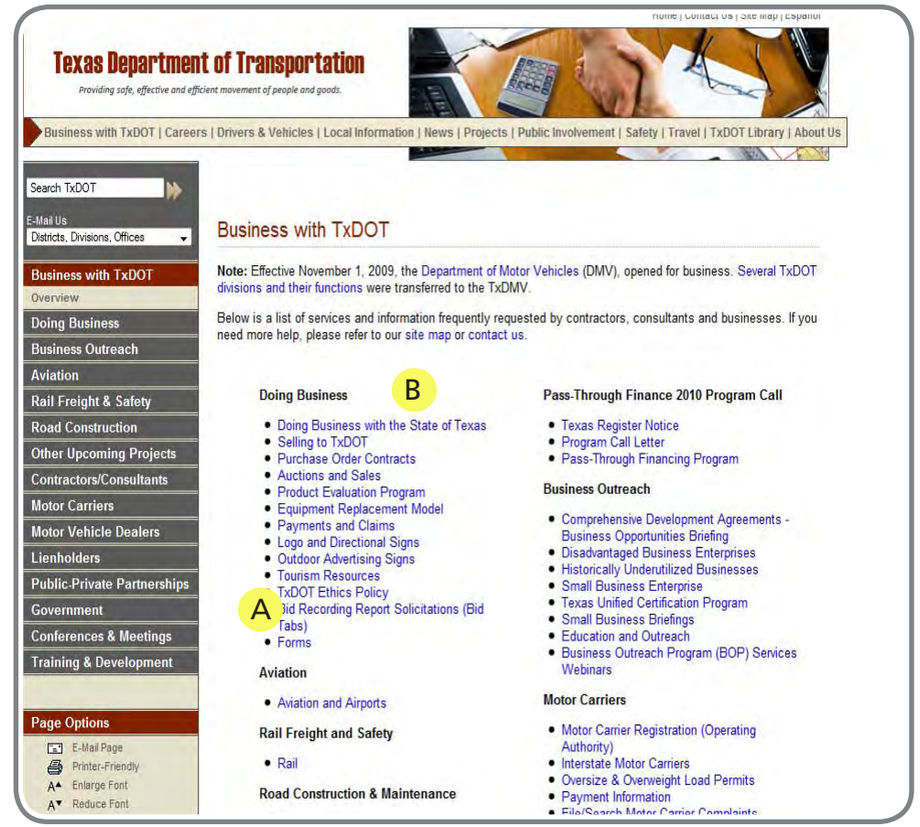
[1] Some links take the user to out-dated pages within the TxDOT domain that do not follow the page conventions, layout, or branding of the rest of the site. (Business with TxDOT> Contractors/Consultants > Specifications leads to the TxDOT Expressway).

[2] Many links appear as html pages, but a PDF is loaded instead. This is often a lengthy process, with no warning that a PDF is being loaded. A PDF icon next to the link should be displayed.

[2] The user is referred to the sitemap or asked to contact TxDOT if the information they need is not found on the "Business with TxDOT" section. Additional online support may be more appropriate. (B)

[3] The menu labels and language is overly formal and TxDOT-oriented. For example, under "Business with TxDOT > Doing Business > Auctions and Sales," the opening text reads: "The TFC has the statutory responsibility for the disposition of surplus personal property items from state agencies."

[3] The local navigation menu does not seem to be organized in any specific order.



Business with TxDOT, Continued

[3] Some local navigation menu items have only one page option. The user is required to click first on the menu label, and then again when the drop-down is provided, which is unnecessary when there is only a single option.

[3] Only the menu heading is highlighted and not the option within it when clicked. (C)

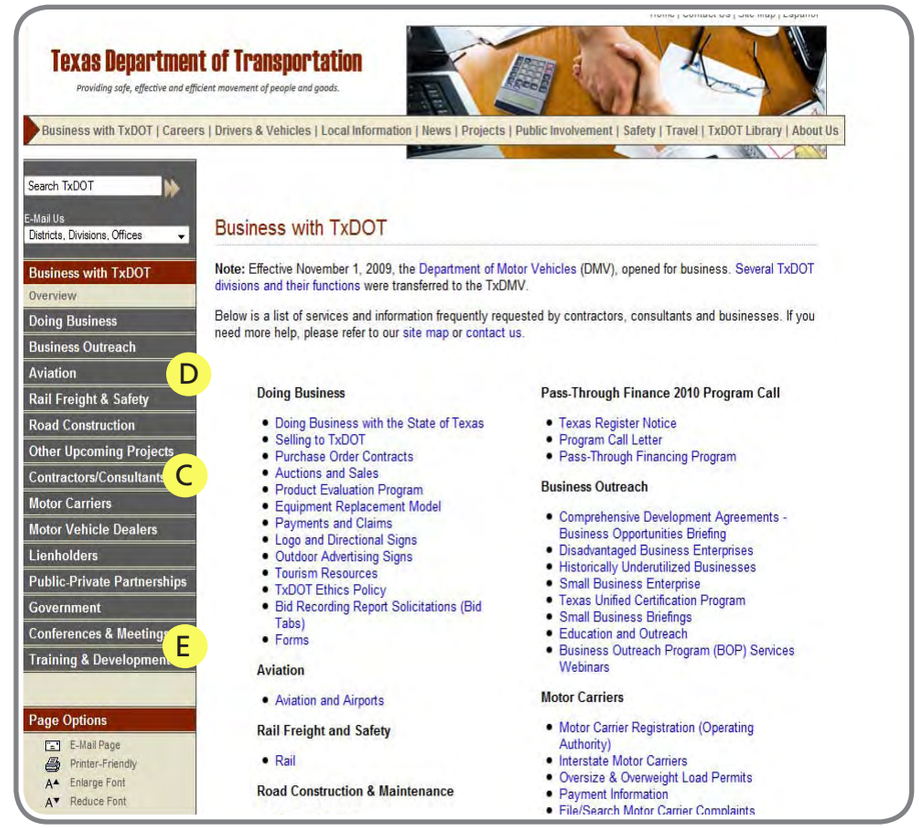
[3] The menu item highlighted in the navigation side bar does not always correlate to the content displayed in the main page area. (Contractors > Environmental Information, Contractors > Materials).

[3] Third-party sites are not distinguished from TxDOT sites. The intermediary page confirming the user wishes to leave TxDOT does not always appear; this confirmation should be consistent. (Doing Business > Business with State of Texas.)

[4] Clicking on a local navigation choice only reveals its sub-headings, rather than changing the information in the main content area. The expected feedback is for the main content area to change relative to the menu selected. (D)

[4] The structure and visual design is consistent with the rest of the content pages, but it differs from the homepage in color scheme and layout. At minimum the global elements like "How do I…" and "Search" should be consistently located.

[+] Most of the information in content pages is organized with bullets and subheadings, which improves the readability of the dialogues. (E)



Careers

[1] The user is taken to the TxDOT HR page to apply for a job, which follows a different visual design and page layout than the main page. It is hard to tell whether the user is still within the TxDOT domain.

[2] The "Employee Benefits" page has no clear information hierarchy. This page is of exceeding importance among prospective hires and should be restructured.

[3] "Employee Self Service" is an ambiguous menu label and does not align with the tasks associated with it (looking for jobs within the TxDOT system). (A)

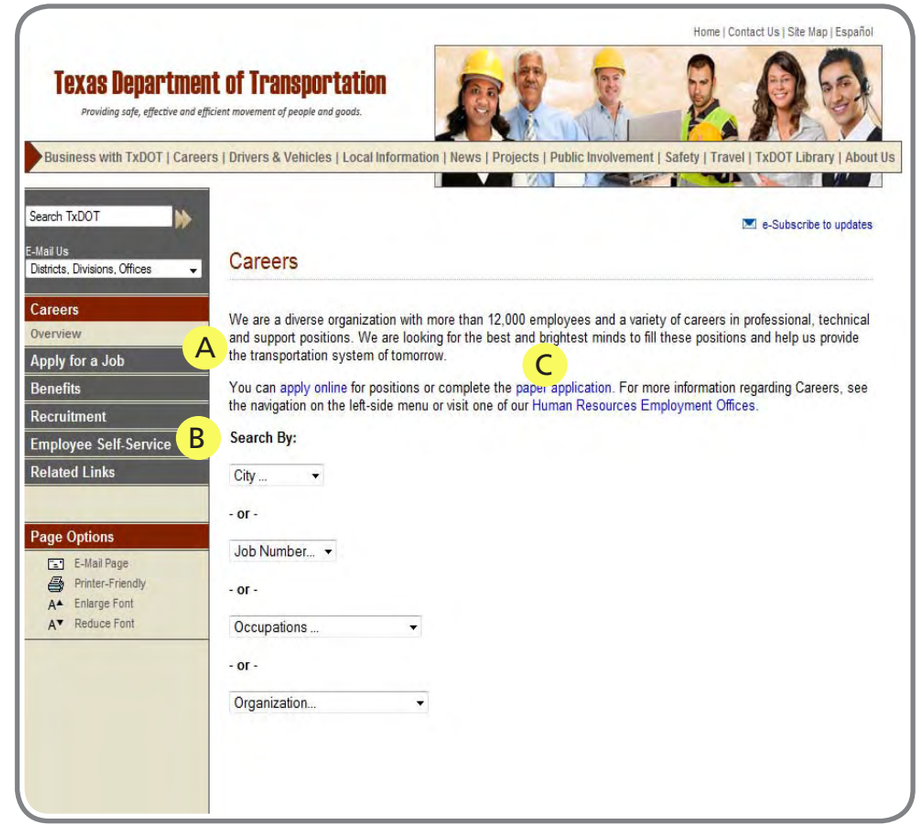
[3] The "Related Links" page provides a list of four links that are somehow related to careers with TxDOT, but no textual explanation is provided about what information is found behind those links. (B)

[3] When clicking on "Job Offices" and "Job Cities" within the job listing, the user is sometimes returned to the same job listing. "Job Offices" and "Job Cities" should only be listed as links when necessary.

[4] The instructions for applying via a "Paper Application" are not clear. (C)

[4] The language used in the application instructions: "Please note that any resumes, references, letters of recommendation, training certificates, or other attachments are removed from the application and destroyed" is somewhat awkward.

[4] Some links take the user to out-dated pages within the TxDOT domain that do not follow the page conventions, layout, or branding present in the rest of the site. (Careers >Job Listings > Job Title).



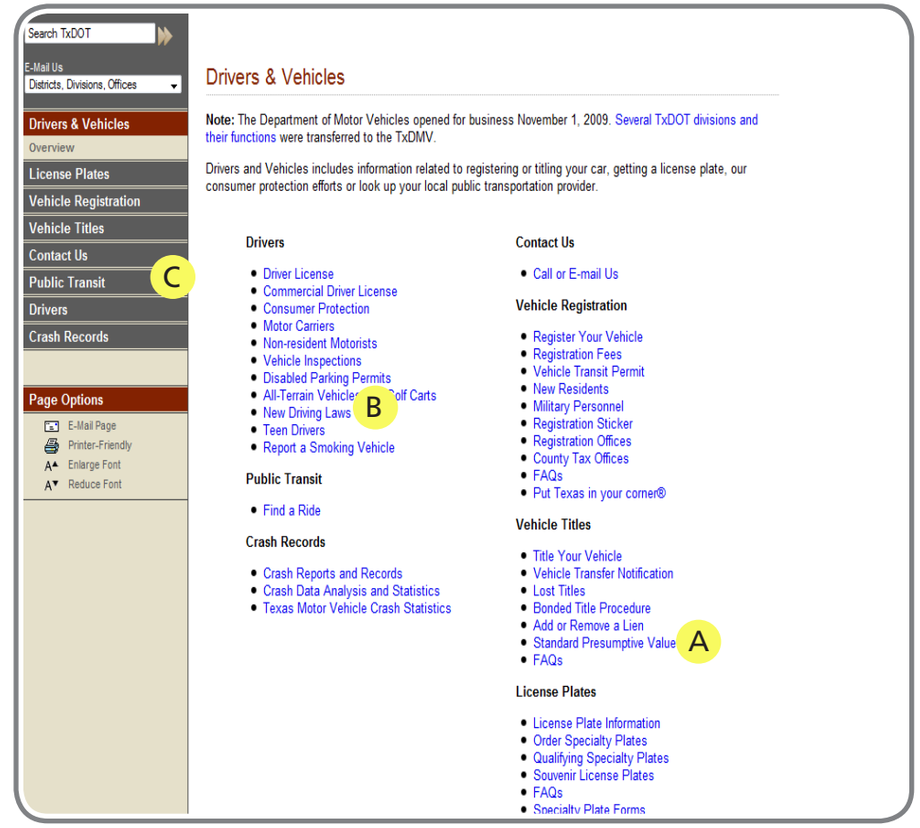
Drivers and Vehicles

[1] The "Find a Ride" page has an inactive form. Upon selecting a county or category of transportation, the page does not change or provide feedback.

[3] On the "Crash Report" page, the main call to action (Request a Report) is buried below the fold. The link to request a report should be moved towards the top of the page.

[!] Like other pages, the main content area looks like a directory of links. The main content area should be used for more contextual information, such as common tasks, FAQs, or popular forms. (A)

[1] Almost every link under "Drivers and Vehicles" directs the user to a third-party site, specifically the Texas Department of Motor Vehicles. Third-party sites should be identified consistently throughout the site. (B)



News

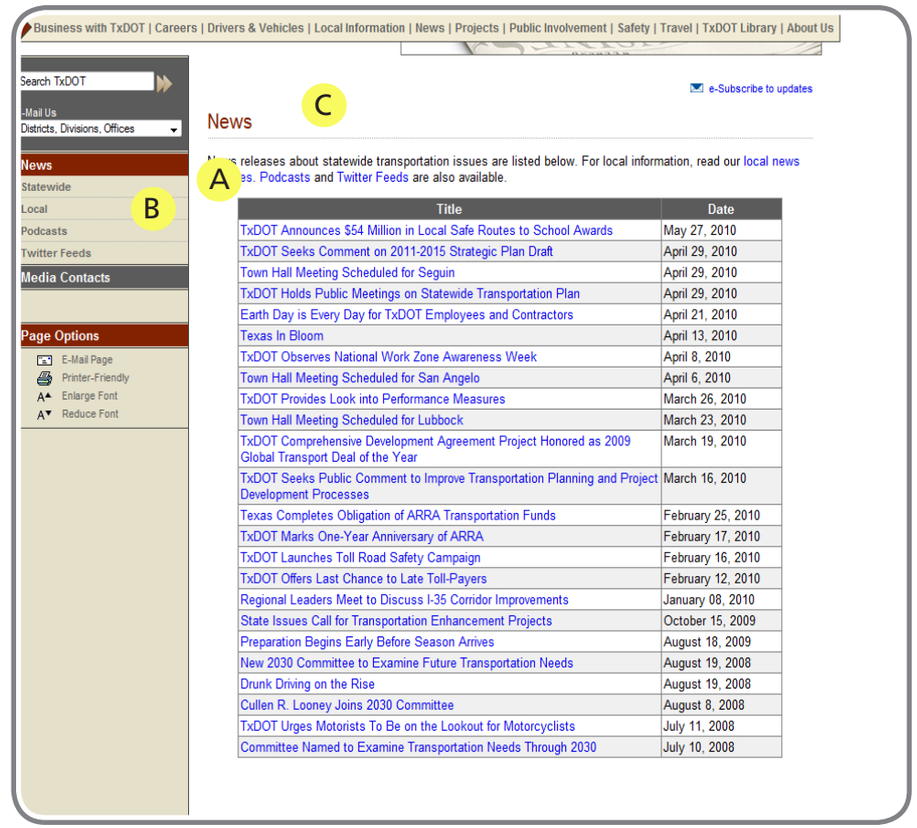
[1] Clicking on “Statewide Media Contacts” from the News section takes the user to a page titled “Government and Public Affairs Contacts” which does not align with the menu label. (A)

[2] Only the latest news and press releases should be displayed (perhaps those from the last 12 months). Older news items should be displayed by year or topic and can be made available from this page.

[3] “Podcasts” are listed by date with no ability to sort by subject, which would be helpful. (B)

[3] TxDOT News and Press Releases need to be further distinguished. Their labels are currently too similar.

[4] “News and Media” may be a more appropriate label for this section, as there are media links on the page. (C)



Title	Date
TxDOT Announces $54 Million in Local Safe Routes to School Awards	May 27, 2010
TxDOT Seeks Comment on 2011-2015 Strategic Plan Draft	April 29, 2010
Town Hall Meeting Scheduled for Seguin	April 29, 2010
TxDOT Holds Public Meetings on Statewide Transportation Plan	April 29, 2010
Earth Day is Every Day for TxDOT Employees and Contractors	April 21, 2010
Texas In Bloom	April 13, 2010
TxDOT Observes National Work Zone Awareness Week	April 8, 2010
Town Hall Meeting Scheduled for San Angelo	April 6, 2010
TxDOT Provides Look into Performance Measures	March 26, 2010
Town Hall Meeting Scheduled for Lubbock	March 23, 2010
TxDOT Comprehensive Development Agreement Project Honored as 2009 Global Transport Deal of the Year	March 19, 2010
TxDOT Seeks Public Comment to Improve Transportation Planning and Project Development Processes	March 16, 2010
Texas Completes Obligation of ARRA Transportation Funds	February 25, 2010
TxDOT Marks One-Year Anniversary of ARRA	February 17, 2010
TxDOT Launches Toll Road Safety Campaign	February 16, 2010
TxDOT Offers Last Chance to Late Toll-Payers	February 12, 2010
Regional Leaders Meet to Discuss I-35 Corridor Improvements	January 08, 2010
State Issues Call for Transportation Enhancement Projects	October 15, 2009
Preparation Begins Early Before Season Arrives	August 18, 2009
New 2030 Committee to Examine Future Transportation Needs	August 19, 2008
Drunk Driving on the Rise	August 19, 2008
Cullen R. Looney Joins 2030 Committee	August 8, 2008
TxDOT Urges Motorists To Be on the Lookout for Motorcyclists	July 11, 2008
Committee Named to Examine Transportation Needs Through 2030	July 10, 2008

Projects

[1] Without institutional knowledge, the user has no way to differentiating between Propositions 12 and 14 or Riders 19, 55, and 56. Dividing projects by geographic area rather than project title or funding source would also be helpful. (A)

[2] Specific tasks relating to tracking projects require too many clicks.

[2] The "Project Tracker" and "TxDOT Tracker" require several clicks before a form is provided for the user. The intermediary pages can be removed to reduce the number of clicks.

[3] Rather than having a second page In the "Studies" section that lists each study by type, a drop down list could be provided on the "Projects" homepage to reduce clicks.

[3] The "TxDOT Tracker," "2010 Planned Projects," "Proposition 14" and "Stimulus" projects open in a new window for no apparent reason, and should stay in the parent window.

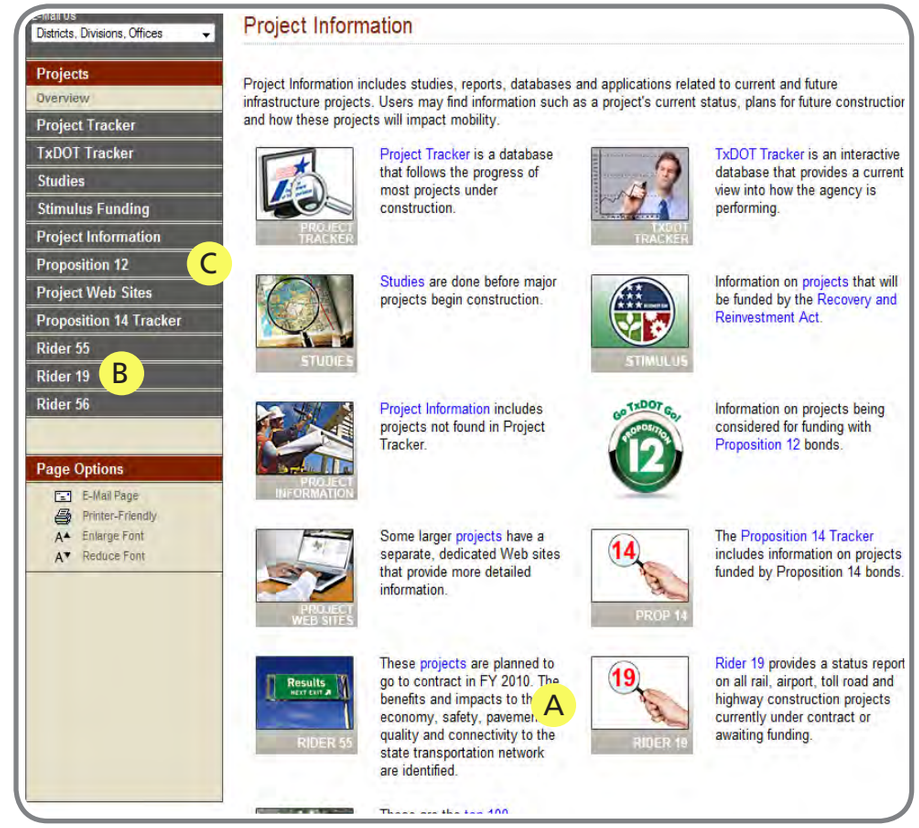
[4] A TxDOT-created "Back" button on the "Studies" listing is unnecessary because of the browser's back button.

[4] The menu and navigation cues provide a label for "Rider 55," but the user is taken to a page titled "FY 2010 Planned Projects." The page titles and link titles should match. (B)

[!] The repetition of local navigation categories in the main content area is not as helpful as providing more practical information, such as searching for projects, project updates, FAQs, or popular forms. (C)

[1] Some links take the user to out-dated pages within the TxDOT domain that do not follow the page conventions, layout, or branding present in the rest of the site (Project > Project Websites).

[1] The menu item highlighted in the navigation side bar does not always correlate to the content displayed in the main page area, (i.e. on "Project Websites," the navigation menu highlights "Proposition 12" (or Stimulus Funding > Recovery and Reinvestment).



Public Involvement

[2] The labels "Community Programs" and "Public Outreach" sound similar. There should be a way to combine these pages or further differentiate their labels. (A)

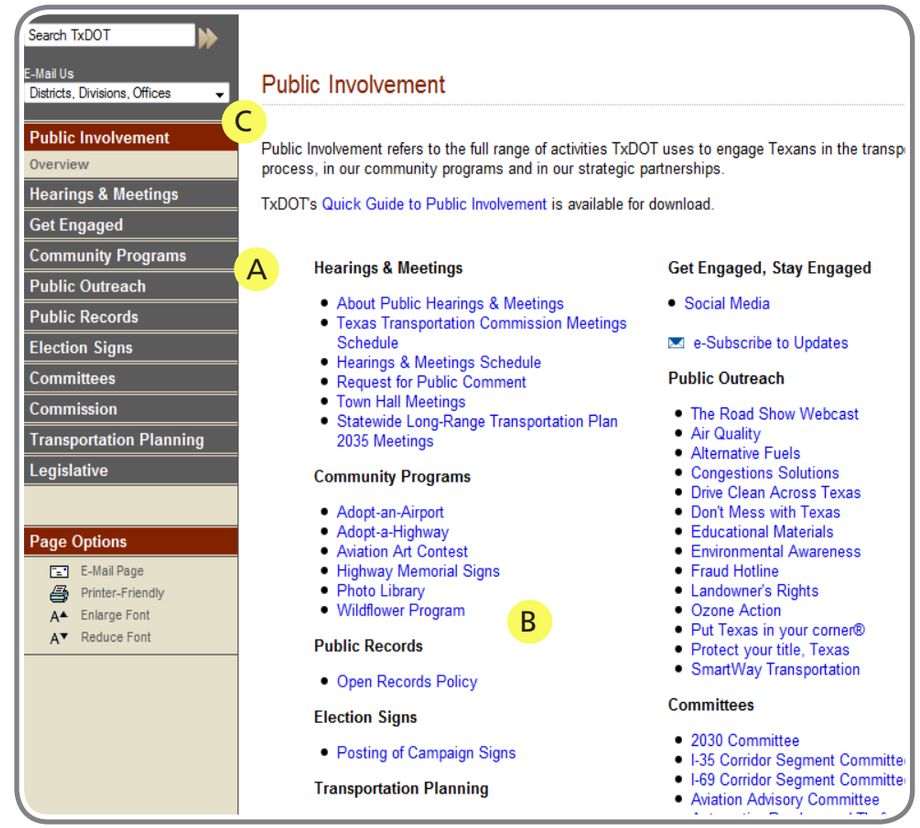
[3] Some of the sub headings of menu items can be combined to shorten the menu list ("Social Media" and "e-Subscribe" under "Get Engaged").

[3] Accessing a Public Records request requires three clicks, which could be reduced if the forms were available on the same page as Public Records information.

[!] Instead of duplicating links from the local navigation, important and frequently used information like upcoming town hall meetings, current plans, committee reports, and FAQs should be displayed in the main content area. (B)

[1] Third-party sites are not appropriately marked ("SmartWay Transportation" is an EPA site).

[1] The menu item highlighted in the navigation side bar does not always correlate to the content displayed in the main page area. (Public Involvement > Maps and Routes > County Grid Routes). (C)



Safety

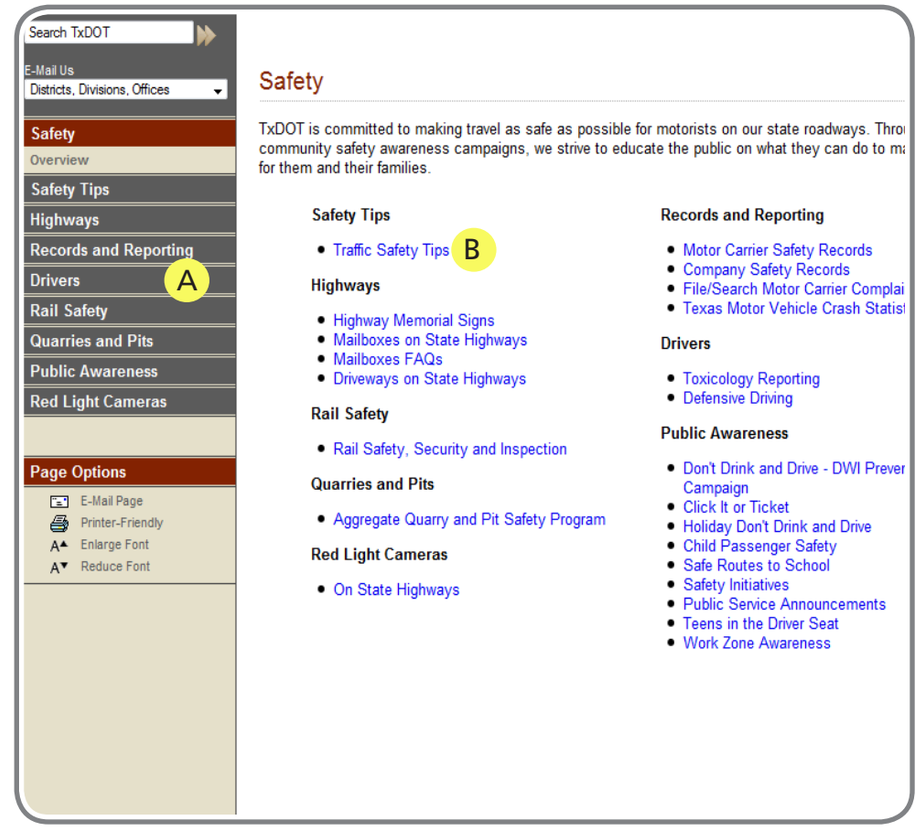
[2] The "Drivers" local navigation label is similar to the "Drivers and Vehicles" label on the global navigation list, which is confusing. A different label should be used in the "Safety" section. (A)

[3] PDFs are used as a primary way of providing safety reports, however, PDFs are often hard to update and access, and they do not lend themselves to easy searchability. They should be replaced with html pages.

[4] The "Traffic Safety Tips" menu item shows a sideways drop-down navigation list, which is different from the drop-down convention followed throughout the rest of the site. (B)

[4] The "Back" button on the "Crash Statistics" listing page is unnecessary, as the browser's navigation is sufficient.

[!] Instead of duplicating links from the local navigation, the main content area should be used to display important information like upcoming safety tips, statistics, or FAQs.

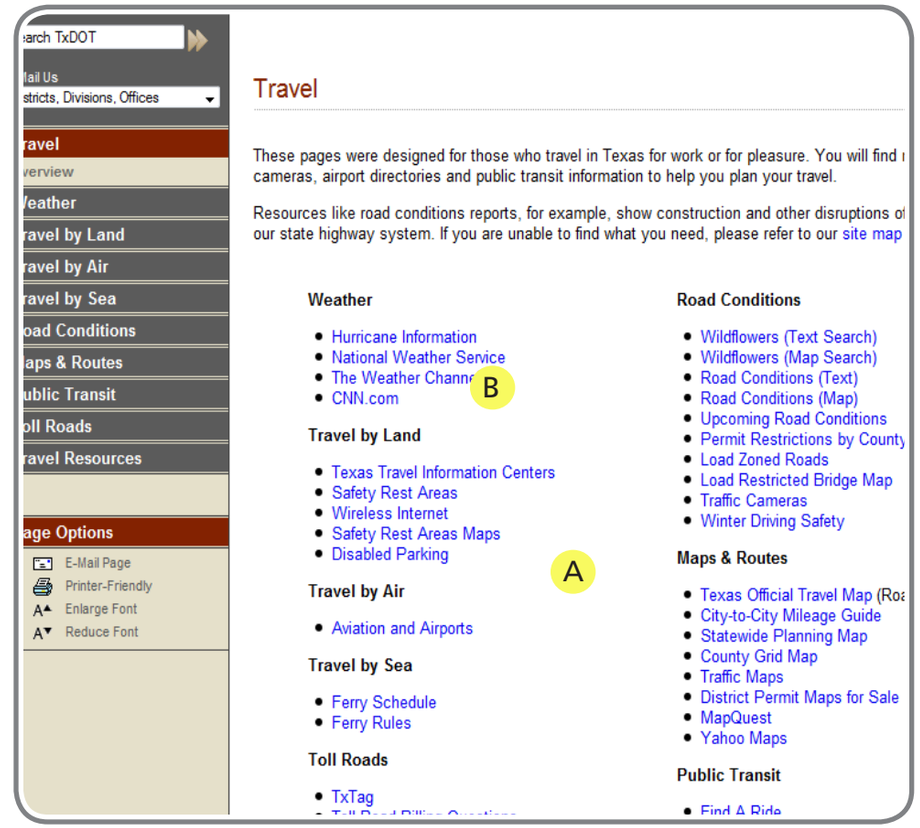


Travel

[!] Information like current weather advisory, renew TxTag, pay a fine, and road conditions would be very useful to have on the main content page, rather than a directory of links. (A)

[1] Third-party sites are not distinguished from TxDOT sites (Weather Channel). (B)

[1] Links that appear to be html pages load as PDFs instead (Texas Official Travel Map). PDFs should be identified so the user is aware of their action before clicking.



TxDOT Library

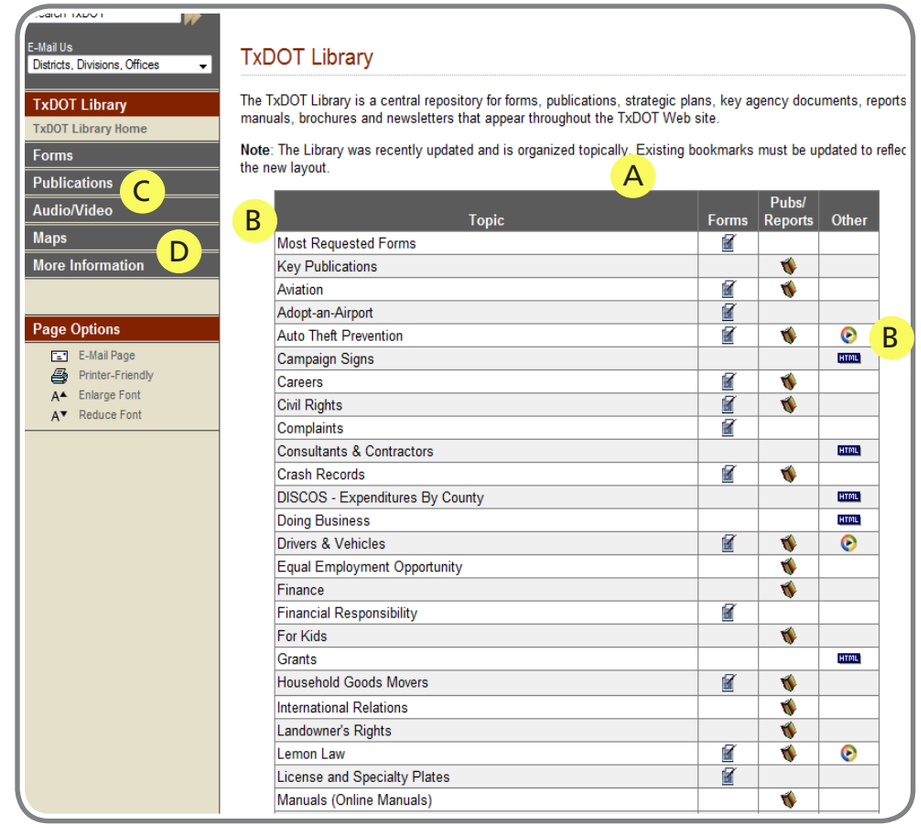
[2] The tabular format displayed here is helpful, but the links should be prioritized based on importance and usage. (A)

[2] The "Forms," "Reports" and "Other" categorizations do not lend themselves well to this organization structure. The information can be divided by format, and then organized by most relevant links. (B)

[3] Third-party sites are not distinguished from TxDOT sites ("Auto Theft," "Lemon Law" under "Audio Visual"). (C)

[3] "More Information" could have a more specific label, possibly "Resources" or "External Links." (D)

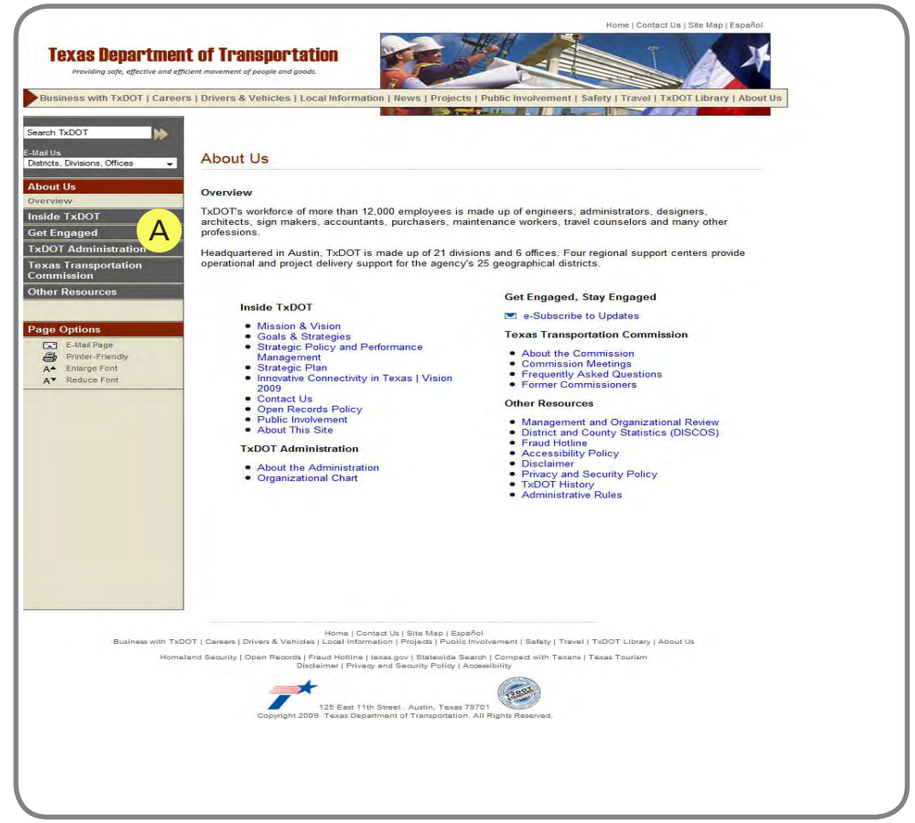
[3] There is no search option available within the Library page. Although the entire site has a search option, it would be helpful to have a special search tool for the Library, especially considering the Library's reliance on PDFs.



About Us

[2] The "Get Engaged" section is the same label as in the "Public Involvement" menu, but the "About Us" menu doesn't offer social networking, which is inconsistent. (A)

[3] It should be possible to reveal a preview of the content behind important headers such as "Mission," "About TxDOT," "Contact Us," and "FAQs."

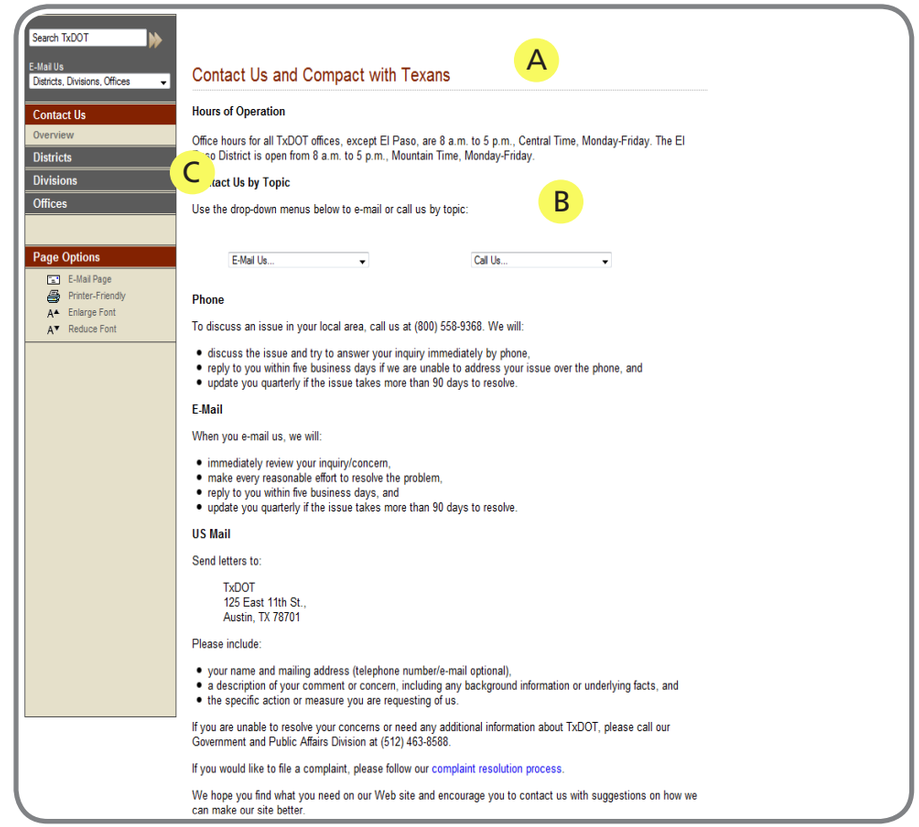


Contact Us

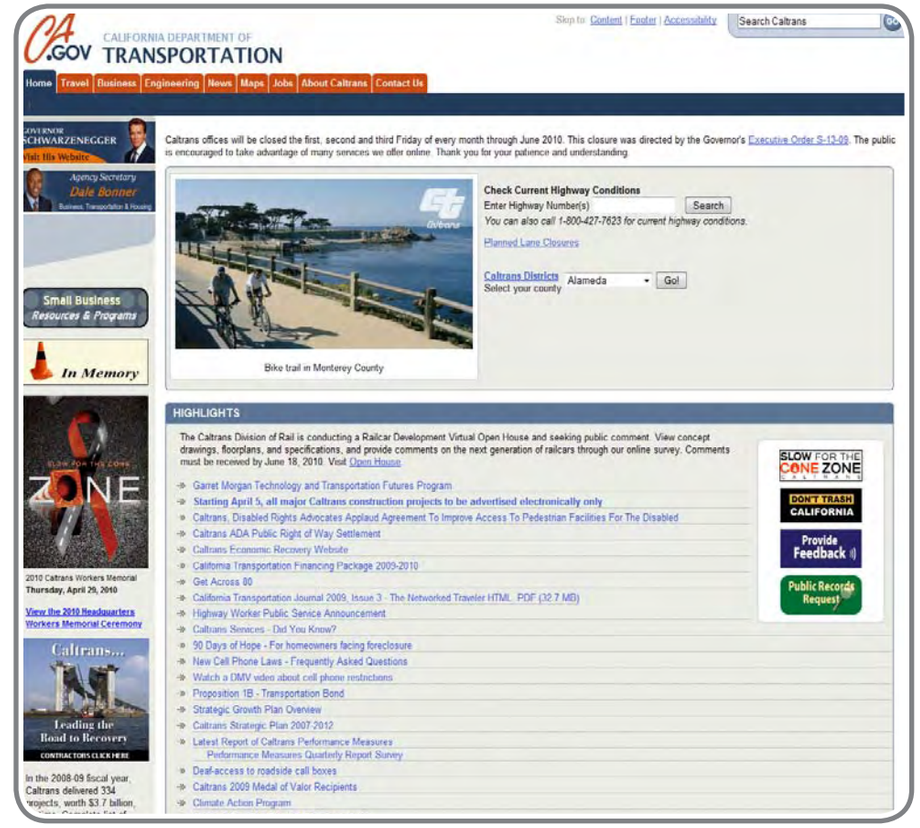
[2] The page title: "Contact Us and Compact with Texans" should be clearer. (A)

[3] The form for providing contact information is cumbersome. Providing drop-downs for the state would be helpful. (B)

[3] The list of "Districts" and "Divisions" could be condensed into a selectable drop-down list, rather than a static list of each area. (C)



California DOT (Caltrans)



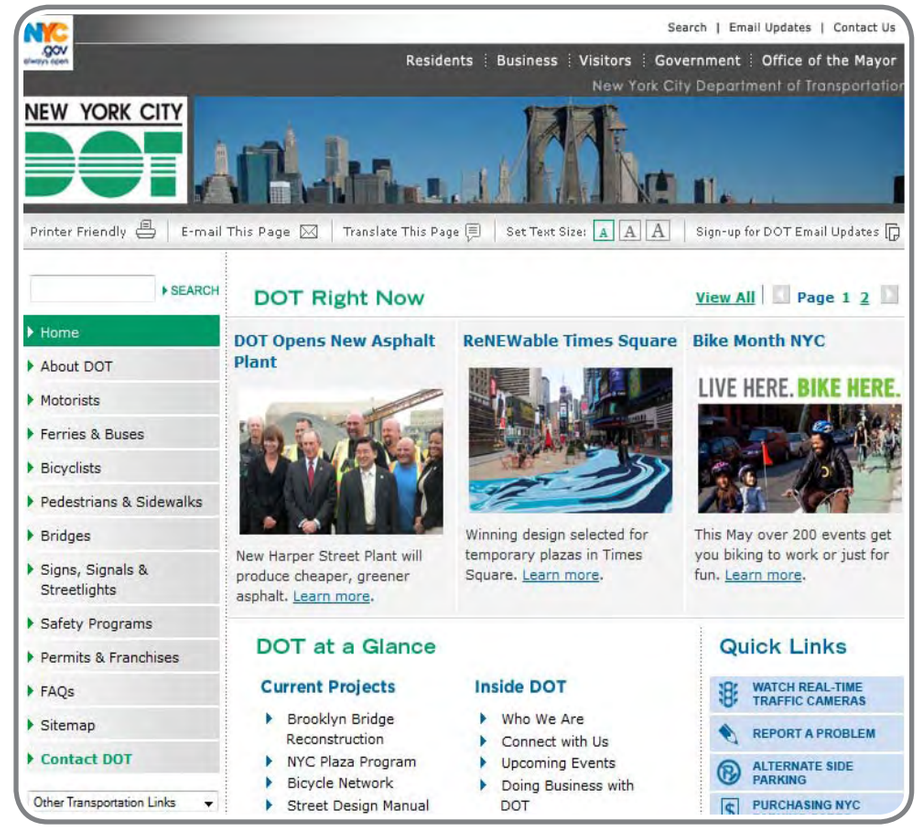
Overview

Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Caltrans carries out its mission of improving mobility across California with six primary programs: Aeronautics, Highway Transportation, Mass Transportation, Transportation Planning, Administration, and the Equipment Service Center.

Highlights

- Fewer global categories make it easier to find relevant information.
- A frequently used feature of many public transportation sites, information about highway conditions, is prominently placed on home page.
- Pages follow "liquid layout" to accommodate most screen resolutions gracefully.
- Multiple navigation options (below the global navigation bar, left side bar and categories on page) seem unrelated and confusing.
- The visual design appears dated and amateurish.
- All categories are combined under "Highlights" on the home page, making it difficult to parse less from more important ones

New York City DOT (NYC DOT)



Overview

The NYC DOT has a staff of over 4,000 that oversees one of the most complex urban transportation networks in the world. Its staff manages approximately 5,800 miles of streets, sidewalks, and highways and 789 bridge structures, including six tunnels. DOT staff installs and maintains over 1.3 million street signs, traffic signals at more than 11,900 intersections, over 300,000 streetlights, 69 million linear feet of markings, and approximately 63,000 parking meters. DOT promotes the use of sustainable modes of transportation.

Highlights

- This site is shallower than those of California and Texas, as it focuses only on one city.
- Home page is nicely segregated between news, updates, current projects and quick links.
- Quick links are action oriented rather than informational only.
- News and updates are present but occupy a small amount of screen real estate.
- Visual design is muted and aligns with the DOT brand by conveying attributes of being safe, eco-friendly and professional.
- Although the navigation does not appear to be arranged in any order, the labels are very user-centric to aid findability.
- Content pages are categorized under header links with a short preview of the information behind each.
- Ability to view pages in a print-friendly format and resize text make the site more accessible.
- Fixed width of the pages will hinder ability to make better use of higher resolution monitors.

Appendix

Method

A heuristic evaluation is a systematic inspection of a user interface for usability. Usability specialists and subject matter experts evaluate an interface against recognized design principles ("heuristics").

This method is a quick and inexpensive technique to identify major problems in order to make more efficient use of the thorough usability test. Ideally, the heuristic evaluation should be done multiple times in the development cycle, but especially before the start of usability testing to catch glaring issues.

A major drawback of the heuristic evaluation is that specialists, regardless of their skill and experience, are not necessarily representative of typical users of the product. Therefore, a heuristic evaluation should always be a part of a more thorough and larger user-centered design process, including multiple usability tests.

Objectives

Heuristic objectives and principles are the criteria used to evaluate an existing website and make recommendations about how the site can be improved. The objectives of the TxDOT website are to:

- Understand the business objectives, technical constraints, and user goals and tasks.
- Evaluate the site against a set of design principles and the contextual research using personas, user journeys and web logs.
- Analyze the competition for strengths and weaknesses.
- Collate the findings and recommendations

Principles

Information Architecture:

- Is there a strong call to action on each page?
- Does information appear in logical order and task sequence?
- Are third-party sites appropriately integrated?
- For a more complex task, how well does the interface step the user through sub tasks?

Visual Design

- Is the brand of the company supported through logo, pictures, and visual design?
- Do visual cues and color help the user interface?
- How clear are the meanings of graphical elements such as icons and toolbar buttons?

Language and Content

- Is the users' language used, with words, phrases and concepts familiar to the user, rather than system-oriented terms?
- Do dialog boxes contain only information that is relevant and needed (content and instructions are not verbose)?
- Is content updated regularly?

Functionality

- Is appropriate feedback of users' actions provided within reasonable time?
- Is there a clearly marked "out" to leave an unwanted state without having to go through extended dialog boxes?
- Are online forms easily accessible and usable?
- Does the site offer a search function?

Help and Documentation

- Is Help Information easily searchable?
- Does help information focus on the user's task, list concrete steps to be carried out, and take up minimal screen space?

Error Messaging and Recovery

- Are error messages presented in clear language?
- Rather than just identifying the problem, does the error message offer a helpful solution?

Search Engine Optimization

- Does the site appear in the top 5 results of search engines across multiple search term combinations?
- Is metadata structured to increase the visibility of the website?

Goals of Evaluation

The overall goal of this audit is to evaluate the user experience of the TxDOT website. The findings from this evaluation will help frame some user experience issues that can be explored in detail during subsequent usability tests.

Some of the main objectives for this evaluation are:

User-centric

- Efficiency of site and content architecture to enable easy navigation and searching
- Easy to accomplish tasks and seek information
- Potential roadblocks and errors in completing various task flows
- Emotional satisfaction while using the site
- Personalization and customization to target each specific user profile

Business-centric

- Increase online usage
- Decrease support cost
- Consistency of brand messaging across the site
- Quality of information
- Search engine optimization
- Flexibility and scalability of the site design

Scope

The pages examined in the heuristic evaluation were selected to assess the task flows of the website's primary users. Due to practical constraints, 12 pages were detailed in the screen-level findings found in this document. The selected pages were either identified in web logs as areas of greater usage or were part of the task flow of the primary personas.

Additionally, websites for the following two agencies were reviewed to ascertain some of the best practices for public departments of transportation.

- California DOT (Caltrans)
- New York City DOT

Personas

In addition to validating design principles, this evaluation was conducted while keeping in mind the tasks of the following primary personas. For more details on these personas, please refer to the "TxDOT Personas" document.

1. Melanie – Travel (Personal)

- Find alerts on weather and road conditions
- Read updates on traffic and road construction
- Check availability of rest area
- Keep her children calm and safe throughout the drive
- Confirm compliance with safety regulations

2. Javier – Natural Disaster

- Familiarize himself on evacuation routes and shelters
- Learn about how the government intends to address contraflow in the future
- Find tips about how to stay safe at his home in the event of a hurricane
- Create a list of supplies to take with the family in the event of an evacuation
- Share information with his community and clients

3. Russell – Travel (Commercial)

- Identify restricted bridges en route to his destination
- Check traffic and road conditions
- Plan alternate routes to visit his family
- Locate rest areas that meet his needs
- Register for Weight Tolerance Permits

4. Doug – Doing Business with TxDOT

- Check the status of his company's pre-certification and insurance
- Learn about using recycled materials in construction
- Search for and download project plans online
- Find out about the TxDOT payment schedule
- Access information about sub-contracting standards and requirements
- Stay abreast of public involvement and mobility issues

5. Evelyn – Public Involvement

- Locate project information about Interstate 69
- Learn about TxDOT's plans for expanding the interstate
- Find out when the next local meeting will be
- Share information with her community

6. Jill – Lawmaker

- Find information on projects under construction in her district
- View Commission agendas and watch Commission meetings online
- Guide her constituents to TxDOT program webpages
- Stay updated about TxDOT public involvement activities so she can notify her constituents

July 2010

TxDOT Website Anaylsis and Evaluation Project

Part 5: Usability Evaluation

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Executive Summary

The Texas Department of Transportation (TxDOT) contracted with Sherry Matthews Advocacy Marketing (SMAM) to conduct a usability evaluation of the existing TxDOT site. SMAM chose Design For Use as the subcontractor to conduct the study. The usability evaluation captured both subjective and objective data by observing a representative group of users interact with the website. Participants were asked to complete a series of common tasks on the website, as determined by stakeholder interviews, website metrics, and the website audit.

The primary objectives for this evaluation were to:

- Identify potential barriers to usage
- Find ways to improve the navigation of the site
- Learn about the user's mental model of TxDOT as a state agency

For the website to be considered successful in a study of this kind, representative users should be able to complete most of the primary tasks without assistance and should respond positively to the website. Representatives and stakeholders from TxDOT can use the findings and recommendations in this document to improve the overall user experience – navigation, informational hierarchy, content, visual design – of the website and prioritize future efforts.

Top Findings

Search Engine Optimization

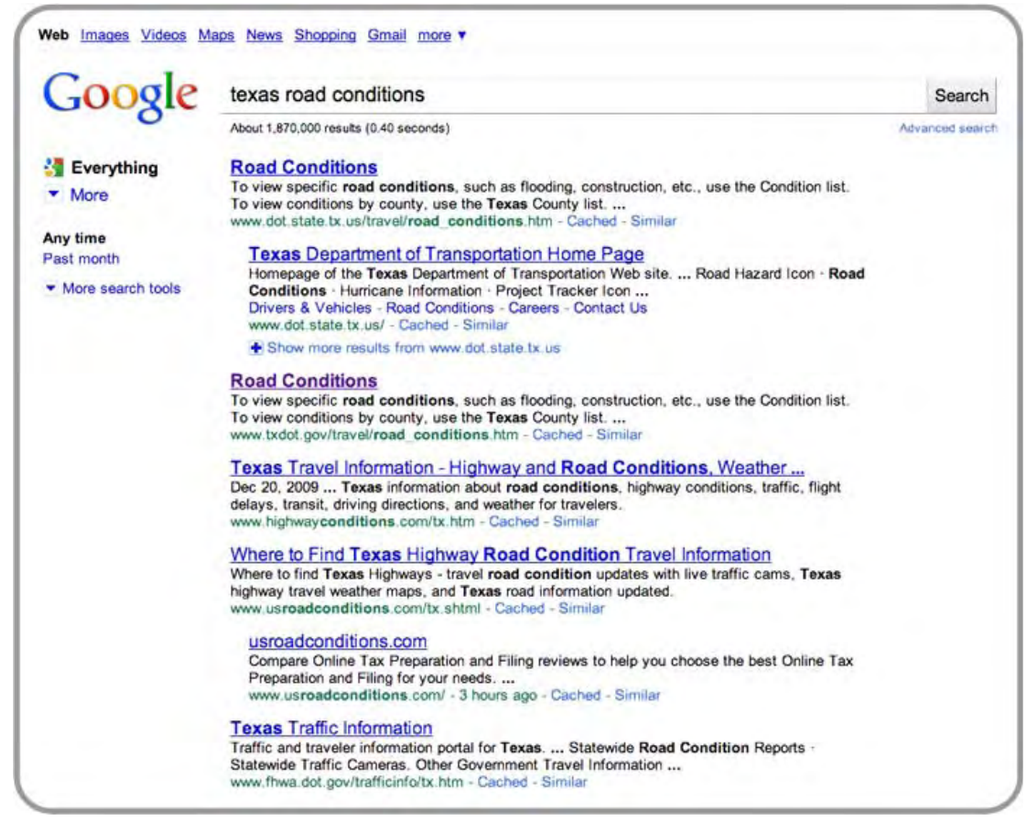
Users can easily find the TxDOT site online due to its sound Search Engine Optimization (SEO).

Finding:

- Many users searched for “Texas road conditions” or “TxDOT road construction” and were able to get to the TxDOT site without prompting from the moderator.
- The navigation menus and link names generally align with page titles.

Conclusion:

- The Search Engine Optimization is sound and many users eventually found the TxDOT website through natural navigation from a search engine.



Homepage

The extensive number of links and options on the homepage overwhelms some users.

Findings:

- Many users indicated they were overwhelmed by the number of options available on the homepage.
- The search box and "How Do I" sections are hard to find, but served as a primary aid to many users once located.
- Participants made use of the "Quick Links" but had little use for the "What's New" section.
- The district map is confusing and hard to manipulate; participants were interested in searching their county, not district.
- Users sometimes bypassed the "Topical Resources" menu list.

Recommendations:

- The page layout should be changed to draw attention to the most useful information, specifically by positioning "Quick Links" as a major resource.
- The search box and "How Do I" options should be brought to the center content area.
- The map should be moved to a sidebar and made clickable by county.
- The "Topical Information" menu should move across the top of the page, as it appears in each content page.

Need for Tasks and Tools

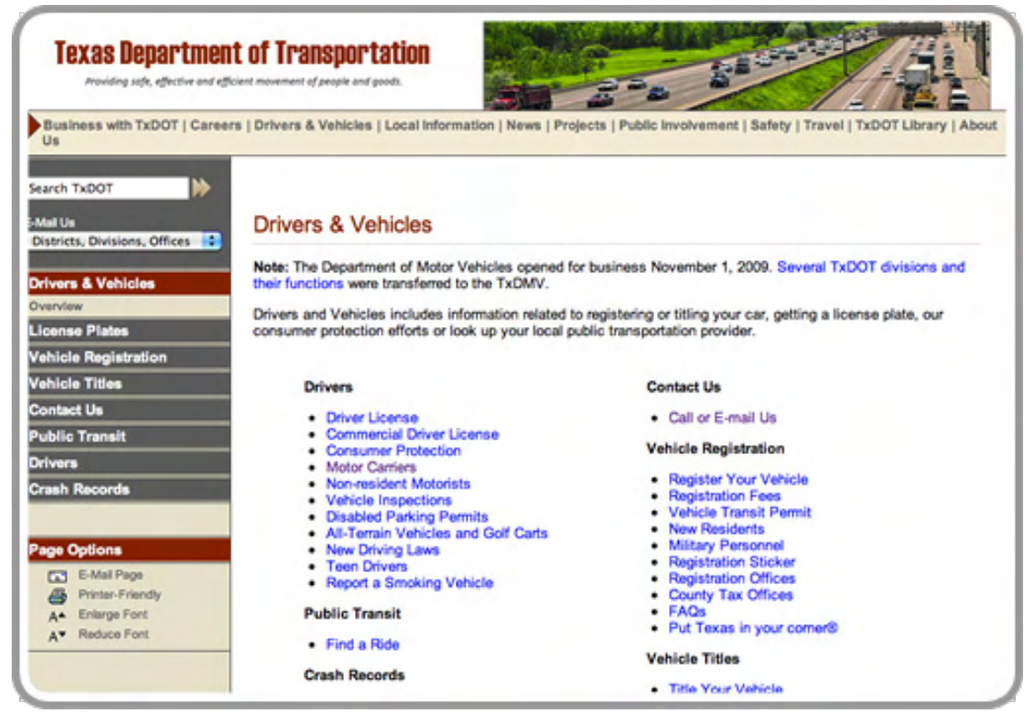
There are no clear tasks or tools on the homepage or main content areas.

Findings:

- Users were overwhelmed by the number of links presented on both the homepage and each additional content page.
- Due to the large number of options, users were unable to locate a link they needed, even while looking at the page where it is listed.

Recommendations:

- Rather than presenting a list of links, prioritize information by most common page views or popular search results.
- Provide relevant forms, tools, and tasks on the homepage and main content areas.



Left Navigation

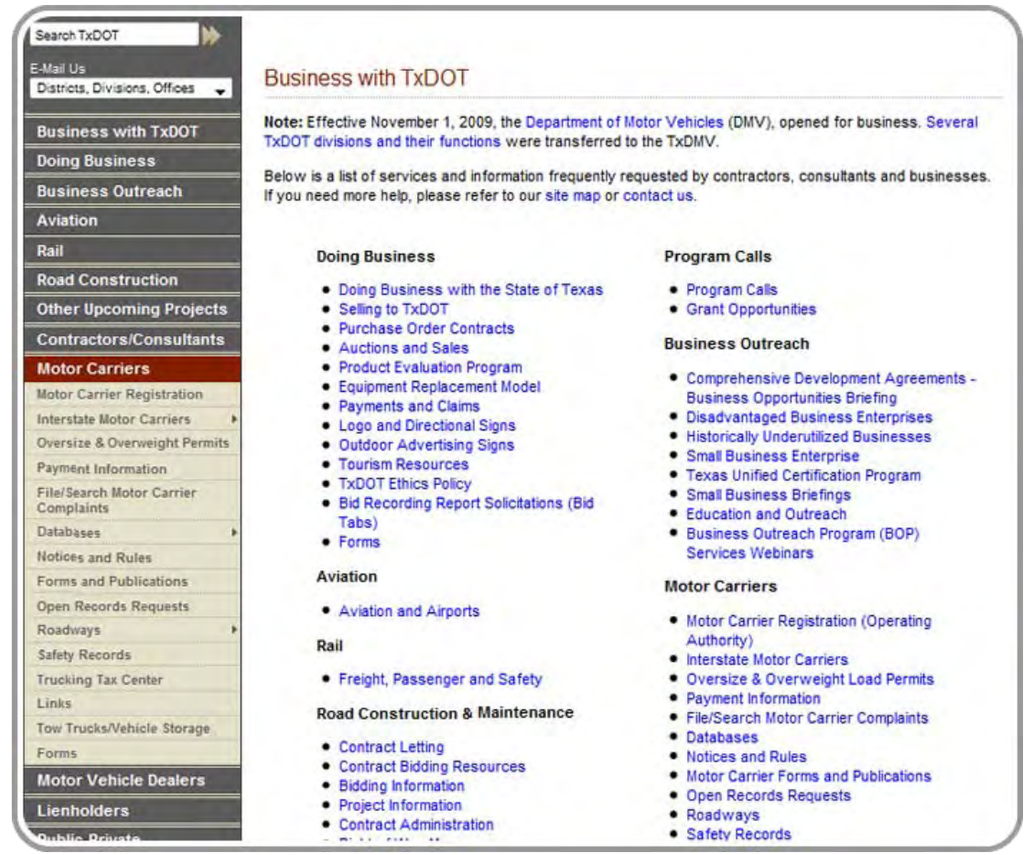
Left navigation menu is not consistent and is overly complicated.

Findings:

- The number of choices on the left-hand navigation make it challenging for users to find information.
- Participants were reliant on the left navigation menu to move through the site, but were often confused by the changing nature of the left menu (specifically with content shared by different global navigation pages).
- The menu options do not always align with the information displayed in the main content area.
- The lack of visual feedback from the left navigation menu caused user frustration.

Recommendations:

- Reduce the number of navigation options for each sub-heading by creating links within content pages.
- When selecting an item in the left drop-down menu, the item should change color or become more visually distinct from other menu items.
- The main content area should change to reflect the selection in the left navigation menu.



Difference between Agencies

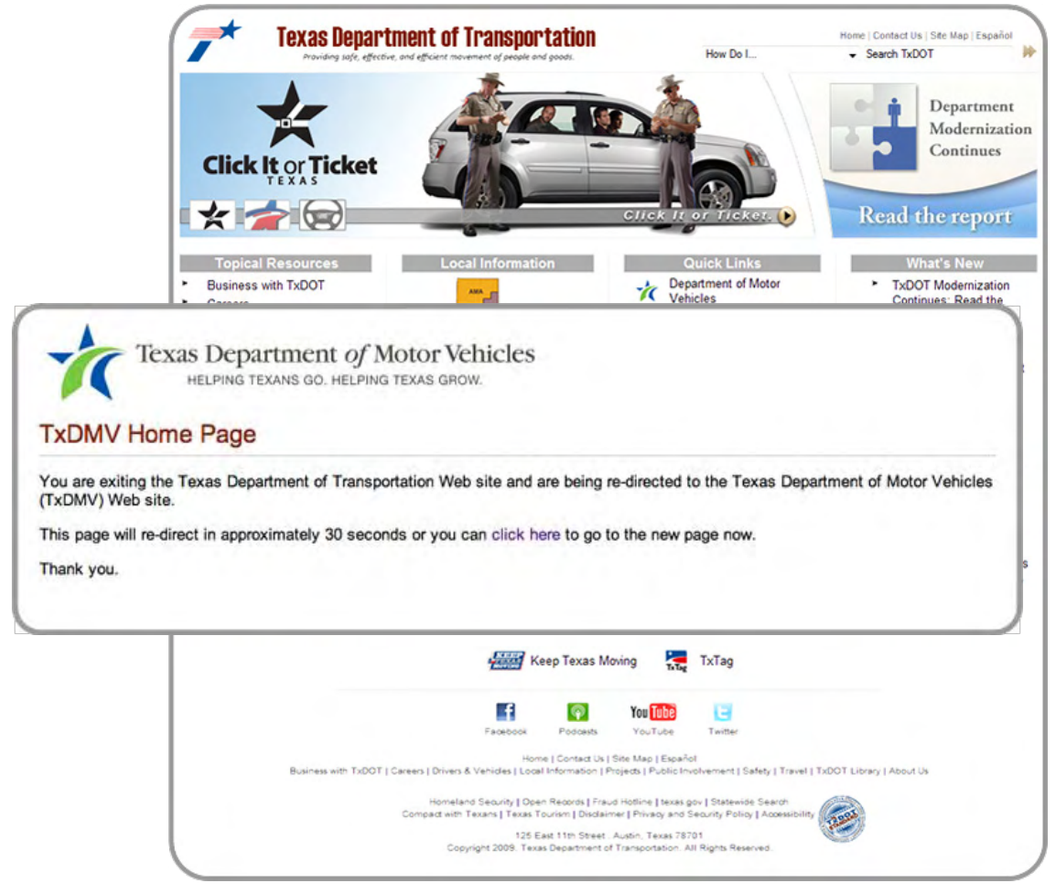
Users are not concerned with the difference between state agencies.

Findings:

- Users do not notice or pay attention to the redirect page that notifies them of the transition to a non-TxDOT site (such as DMV or DPS).
- Although TxDOT, DMV, and DPS serve different purposes, the user was not concerned with understanding those differences.

Recommendations:

- No intermediary page is needed when exiting the TxDOT site, however third-party sites should be consistently indicated by an icon or graphic.
- No explanation of the different state agencies is needed.
- TxDOT can still be used as a portal for users looking for DMV- and DPS-related information and tasks (driver license, registration, bill of sale, etc).



Drop-Down Menus

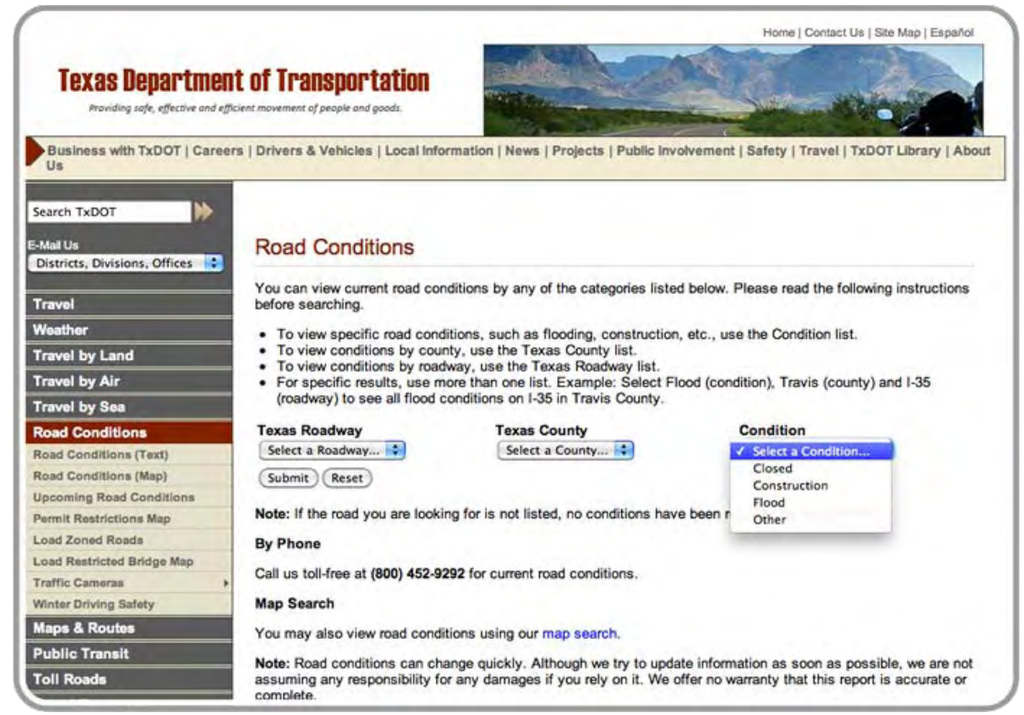
Drop-down menus on TxDOT tools (Project Tracker, Road Conditions, Contact Us, and the Homepage Map) should be presented by county or city consistently.

Findings:

- Drop-down fields for tools are organized by district, division, county, city, or roadway at different times throughout the site, which is confusing for the user.
- When presented with a drop-down list of counties, many Austin-based users inaccurately selected "Austin" as their county instead of "Travis."
- The average user does not understand the difference in categorization between districts and divisions.

Recommendations:

- Limiting the methods of finding local information would be helpful to the user (either by county, city or roadway).
- Providing the county seat or largest city in parentheses next to the county name would improve the accuracy of the users' search. (Example county drop-down: Travis (Austin), Harris (Houston)).



Methodology

Overview

The participants used a live version of the TxDOT website for this study. Users were asked to interact directly with the website to accomplish their assigned tasks. With the exception of the Lawmaker user group, none of the participants had any involvement with TxDOT or state employment prior to taking part in the study.

Protocol

- Each participant met with the study facilitator for approximately 60-90 minutes to complete tasks. Sessions followed the same general order for each user segment.
- An introduction to the study methodology and context was read to the participants.
- A preliminary interview was conducted with segment-specific questions and topics of discussion.
- Participants began online tasks from a website of their choice and were eventually prompted to navigate to TxDOT.
- The facilitator asked follow-up questions in a post-test interview.
- After completing all tasks and interviews, participants filled out a post-test survey.
- Finally, participants were thanked for their time, photographed, and, with the exception of the legislative participants, provided a gratuity for their participation.

Profiles and Tasks

Twenty-six participants evaluated the TxDOT website. Design For Use worked with the TxDOT and Sherry Matthews teams to establish the following profiles and tasks for the usability evaluation:

Melanie — Travel Personal (7 participants)

- Find alerts on weather and road conditions
- Read updates on traffic and road construction
- Check availability of rest area
- Keep her children calm and safe throughout the drive
- Confirm compliance with safety regulations

Evelyn — Public Involvement (6 participants)

- Locate project information about Interstate 69
- Learn about TxDOT's plans for expanding the interstate
- Find out when the next local meeting will be
- Share information with her community

Javier — Natural Disaster (5 participants)

- Familiarize himself on evacuation routes and shelters
- Learn about how the government intends to address contraflow in the future
- Find tips about how to stay safe at his home in the event of a hurricane
- Create a list of supplies to take with the family in the event of an evacuation
- Share information with his community and clients

Jill — Lawmaker (4 participants)

- Find information on projects under construction in her district
- View Commission agendas and watch Commission meetings online
- Guide her constituents to TxDOT program web pages
- Stay updated about TxDOT public involvement activities so she can notify her constituents

Doug — Doing Business with TxDOT (3 participants)

- Check the status of his company's pre-certification and insurance
- Learn about using recycled materials in construction
- Search for and download project plans online
- Access information about sub-contracting standards and requirements

Russell — Travel Commercial (1 participant)

- Identify restricted bridges en-route to his destination
- Check traffic and road conditions
- Register for Weight Tolerance Permits

Expectation and Experience Ratings

Prior to completing each task, participants were asked to rate how difficult or easy they expected the task to be on a scale of 1-7 (1 being very difficult, 7 being very easy). At the completion of the task, users were asked how difficult the task actually was, using the same 1-7 scale.

The before and after ratings are presented on each Task-Level Finding as "Expectation," how difficult or easy the user anticipated the task being, and "Experience," how difficult or easy the task was to execute.

The ratings provided for the Task-Level Findings are shown as an average for each user who completed that task.

Overall Expectation/Experience Ratings

Very few tasks yielded a significant difference between the expected and experienced ease of a task. The following tasks represented the largest discrepancies between expectation and experience:

Requesting Public Comment, Finding Area Shelters, and Finding Plans Online were more challenging than the user expected. Verifying Insurance online was significantly easier than users anticipated.

Task	Expectation	Experience
Request Public Comment	5.5	2.5
Find Area Shelters	4.2	1.6
Find Plans Online	5.3	3
Verify Contractor Insurance	2	4

Task-Level Findings for All Users

Navigate to TxDOT

Expectation: 4.8

Experience: 4.6

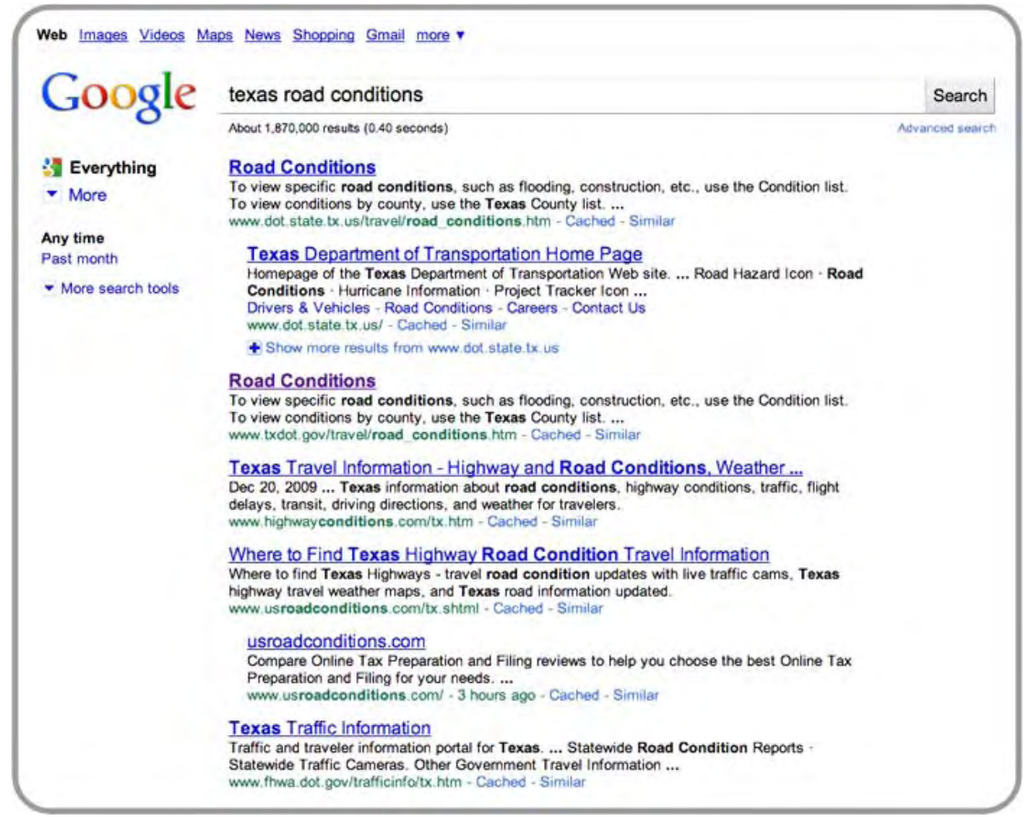
1	2	3	4	5	6	7
hard						*easy*

Finding:

- Many users searched for "Texas road conditions" or "TxDOT road construction" and were able to get to the TxDOT site without prompting from the moderator.
- The TxDOT website generally appeared within the first five search results, which enabled the user to easily navigate to TxDOT.

Recommendations:

- The Search Engine Optimization is sound, meaning that the key words and page descriptions assigned to the TxDOT homepage align with the terms users enter into a search engine.
- It is evident that time and thought has been given to organizing and adding key words to the homepage.



Explore TxDOT Homepage

Findings:

- The amount of information on the homepage was overwhelming for some users; however, users appreciated the “Quick Links” section and easily found information through that menu.
- Several users were distracted by the content in the “What’s New” column. The headlines were similar to their attempted task but did not actually contain the needed content.
- There was some concern that information on government websites is not updated often enough, and users would like more of an indication about when the site is updated.
- Users were satisfied that there is a Spanish language option, but several clicks were necessary through English pages before the Spanish pages appeared.
- Many participants appreciated the focus on hurricane preparedness.

Recommendations:

- The “Quick Links,” “How Do I…” and “Search” sections should become the focus of the homepage.
- The “What’s New” column can be removed or made smaller.
- A date stamp might be added to show users when the information was last updated, or traffic and whether postings could be shown on the homepage to demonstrate that the website is updated regularly.
- The “Topical Resources” links could be moved across the top of the page in order to reduce the number of links in the main content area (this would also follow the page lay-out convention of the rest of the site).

Task-Level Findings for Travel Personal

Find Road Conditions

Expectation: 4.6

Experience: 3.8

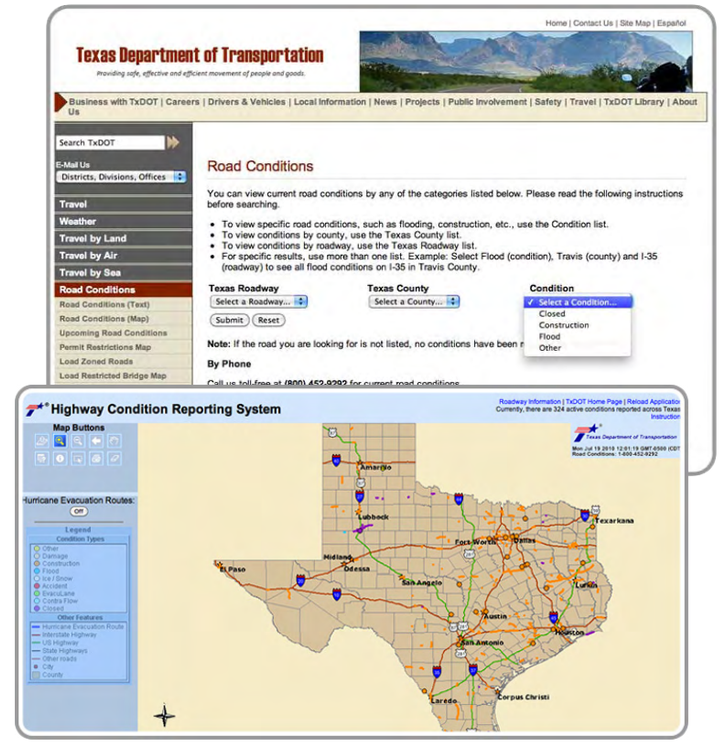
1	2	3	4	5	6	7
hard						easy

Findings:

- Many participants wanted or expected to see a map in this section; they did not notice the option to view search results with a map.
- Searching by county is problematic throughout the site. For example, users searching for information related to the metropolitan Austin area are accidentally selecting Austin county.
- Many participants expected to select a roadway and view all conditions at once (traffic, construction, closures) rather than using a dropdown to select each condition separately.
- Users thought it was necessary to make a selection in each category (roadway, condition, and county) before submitting the form.
- Several users expected to see live traffic conditions.

Recommendations:

- Rather than offering the text version of the Road Conditions tool, the map option should appear first, above the fold of the page.
- Several other state DOTs (Louisiana, Delaware, and Wisconsin) have adopted the 511 Traveler Information option that synchs local traffic cameras with Google map information.
- Users need to be assured that the information they're viewing on the site is updated in a timely fashion.
- The option to search by county should be replaced by city.
- Rather than selecting a specific type of road condition, all conditions should be available in one view.



Learn about Traffic Updates

Expectation: 3.7

Experience: 3.4

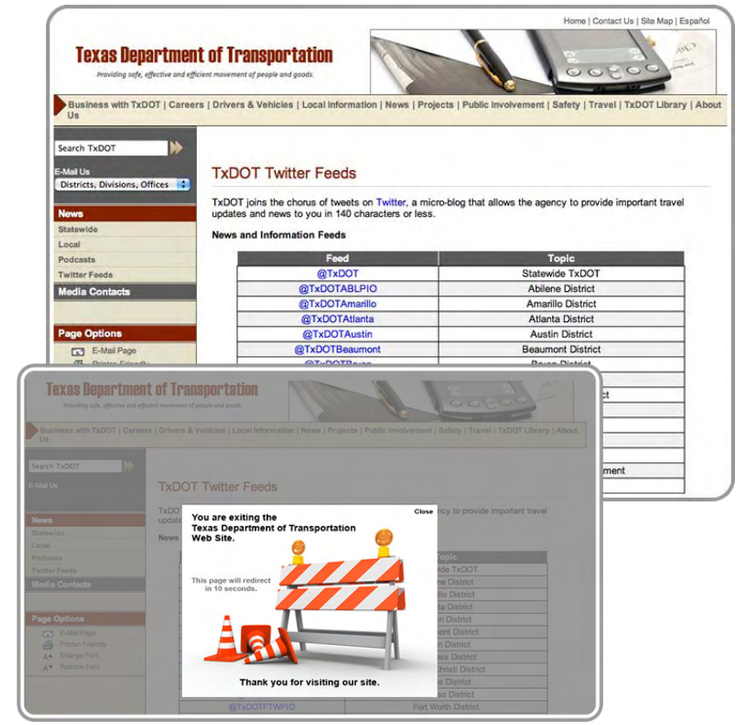
1	2	3	4	5	6	7
hard						easy

Findings:

- Many users had trouble finding the traffic updates, and were only able to access the Twitter pages by using the Search function.
- Displaying traffic information via map would be most helpful and relevant to the users.
- When users were prompted to leave the TxDOT site to visit the Twitter site, the intermediary page made them think they had encountered an error.
- Several users also complained the current information contained in the Twitter feed is too general to be useful to them.
- Participants expressed a desire for live traffic information.
- Many users indicated they would access the information via smart phone app or mobile device.

Recommendations:

- Traffic updates should be made more prominent on the homepage; the Twitter logo does not indicate that traffic information can be found there.
- Traffic information can be displayed via map.
- The intermediary page between TxDOT and Twitter should be straightforward with more text, rather than presenting misleading graphics.
- Larger cities (such as Houston, Dallas, San Antonio, or Austin) could have separate Twitter feeds for the major highways and interstates that affect commuters.
- TxDOT's traffic cameras could be utilized to provide live traffic feeds of major metro areas.
- The Twitter link can also be provided on the Road Conditions page.



Find Rest Areas

Expectation: 4.2

Experience: 4.6

1	2	3	4	5	6	7
hard						*easy*

Findings:

- Some users had trouble finding the Safety Rest Area page initially due to the large number of options on the Travel page.
- The use of latitude and longitude to locate the rest areas was not helpful for the users.
- Several participants expressed safety concerns about using rest stops. There's a perception of high criminal activity.
- The interaction with the Rest Area map and the accompanying content was generally well received.

Recommendations:

- Instead of using latitude and longitude to locate rest areas, exit numbers could be used instead.
- Some expectation can be set about the safety of rest areas to combat their dangerous reputation.

Learn about Safety Campaigns

Expectation: 4.5

Experience: 4.8

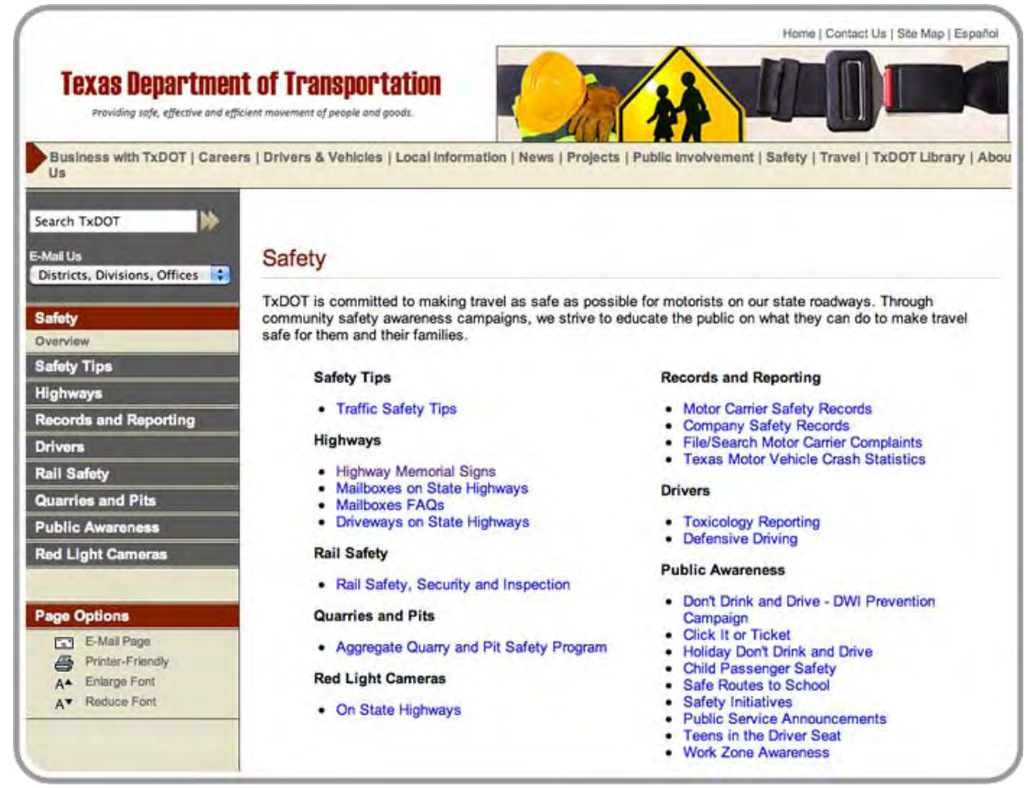
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Almost every participant who attempted this task had difficulty because the link is not readily visible when scanning the page. Several users failed this task.
- Upon finding the information about Safety Campaigns, many users wanted to view the actual text of the law, rather than the interpretation of it.

Recommendations:

- Safety Campaigns should be moved to a more prominent area within the site's organizational hierarchy or the information could be placed in more than one area.
- In addition to explaining how the law impacts drivers, the Safety Campaign page could also offer a link to the wording of the law.



Task-Level Findings for Public Involvement

Use Project Tracker

Expectation: 5

Experience: 4

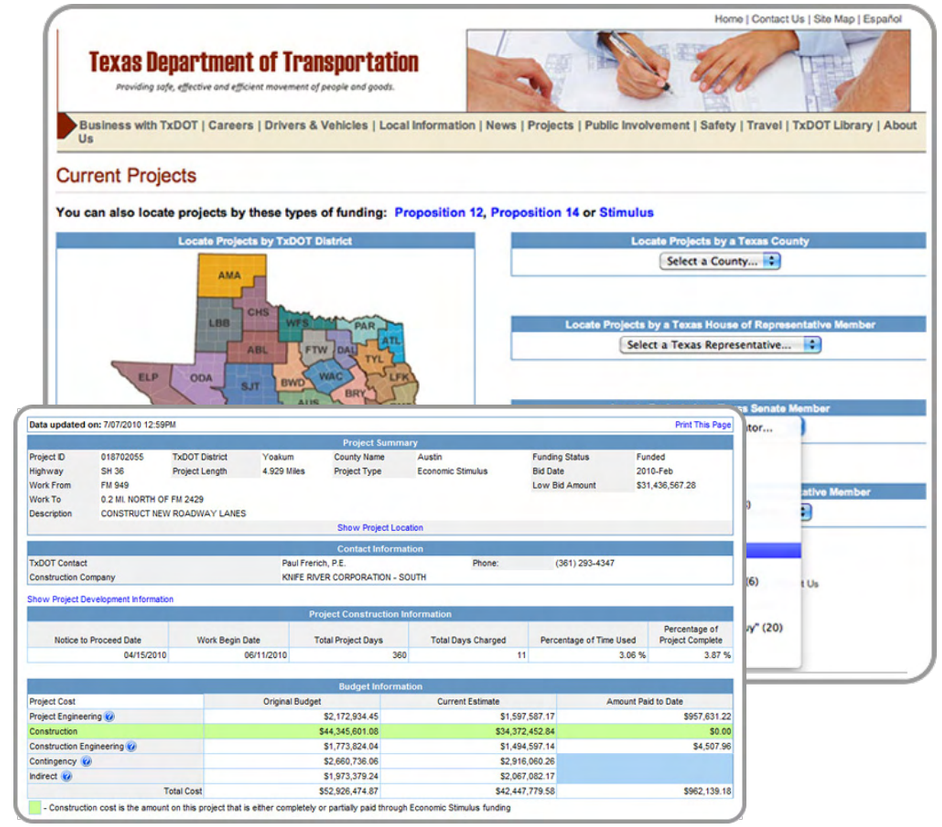
1	2	3	4	5	6	7
hard						easy

Findings:

- Within Project Tracker, many participants indicated they would like to see the projects plotted on a map, and missed the map option at the top of the results page.
- Although it's possible to view Project Tracker results in a map format, users were not able to find the map option, and expressed confusion with the textual results.
- The information on each specific project page within Project Tracker was too detailed for some users. They were more concerned with dates and locations of closures than with money and contractual information.
- Searching by county was confusing for some users.
- Some users thought the term "projects" referred to information for architects or engineers.

Recommendations:

- Rather than presenting several different project-tracking tools on the main Projects page (Proposition 12, 14, and Stimulus Funding) it may be helpful to combine them into one tool.
- The map view should be made more prominent, or even presented as the default view for the Project Tracker results page.
- The information on the individual project pages should be prioritized by most important information (construction dates, location). It is hard to process each piece of information separately.



Attend a Meeting

Expectation: 5.2

Experience: 5

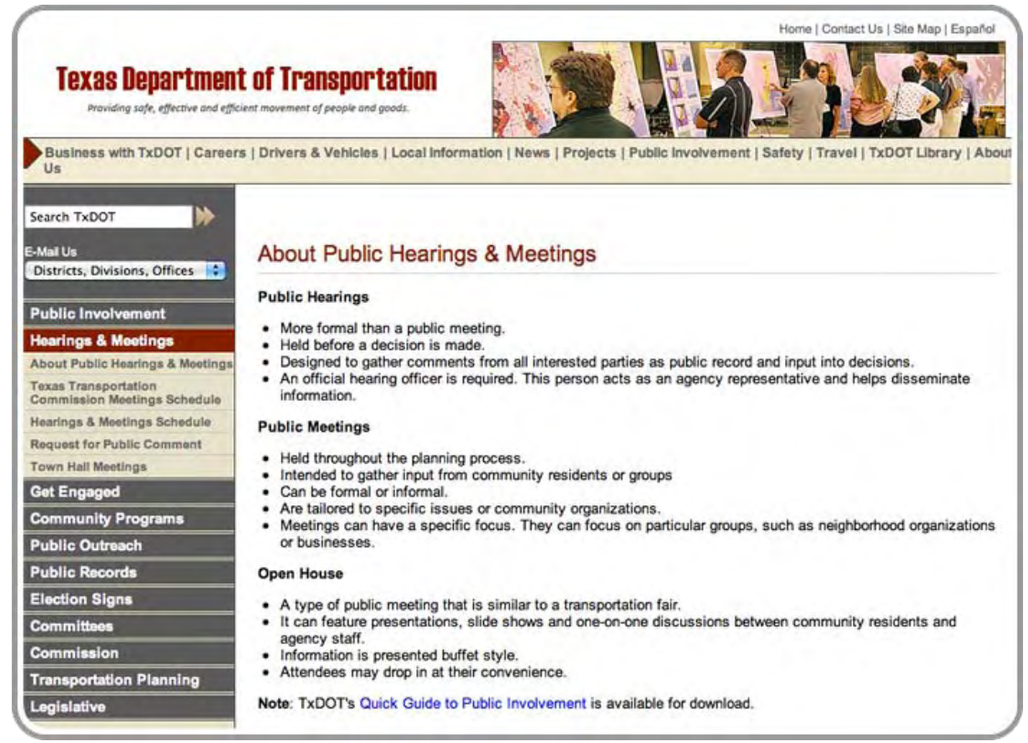
1	2	3	4	5	6	7
hard						*easy*

Findings:

- When selecting the "About Public Hearings and Meetings" link, users expected to find a list of upcoming meetings, rather than information about the types of different meetings.
- Several users failed this task and were unable to find the information due to the excessive number of click-thrus required from the Public Involvement link on the homepage.
- Although some users found the Guide to Public Involvement helpful, others expected to see more specific information about meeting schedules.

Recommendations:

- The public meeting schedules can be moved to a more prominent place in the information hierarchy.
- Including a meeting schedule on the overview page for Public Involvement would reduce the number of click-thrus necessary to reach the schedules.
- Providing information on the homepage about upcoming meetings would be helpful.



Contact TxDOT

Expectation: 5.25

Experience: 5.25

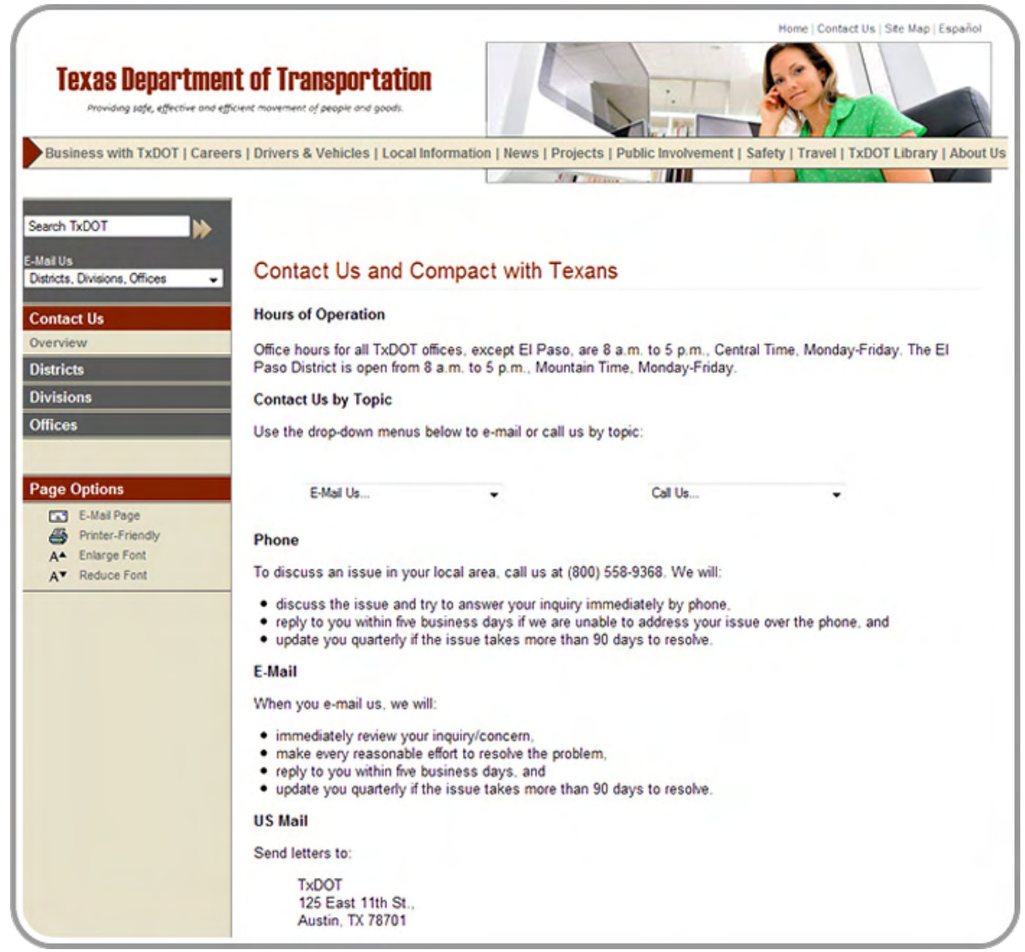
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Users expressed concern about the timeliness of receiving a reply from TxDOT. Waiting for an email may take longer than they wish.
- The phone numbers for different offices did not seem accurate to the users. Sometimes several people are listed as having the same phone number, which implies there is no way to contact someone directly.

Recommendations:

- A more prominent indication should be given about how long it will take a TxDOT employee to respond to the user's concern.
- Phone numbers should be unique for each person listed on the site.



Task-Level Findings for Natural Disaster

Find Evacuation Map

Expectation: 4

Experience: 3.6

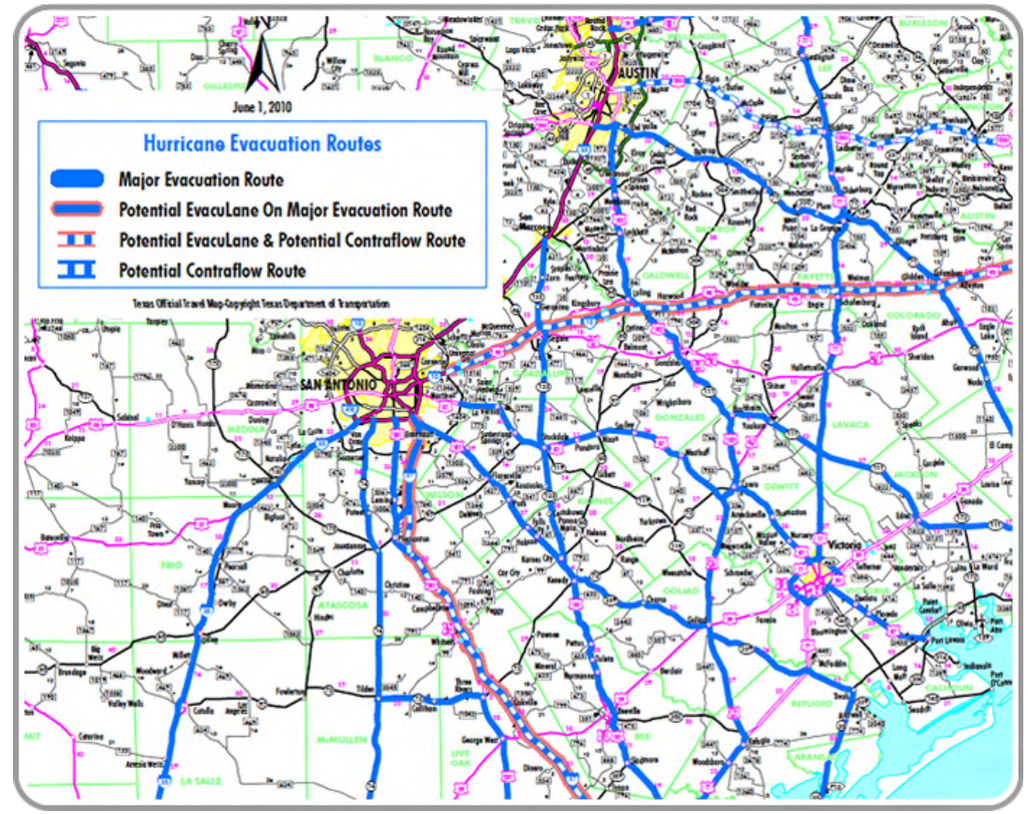
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Participants are concerned with getting real time information specific to their location, alerts about congestion and suggestions for alternate routes.
- Users would like to find information about specific areas of their city, not just a metro area in general. Their evacuation route will be different depending on the part of the city in which they live.
- New residents may not be aware of their county, or which counties neighbor their area, which makes searching by county information challenging.
- Many users appreciated having the links to all of the hurricane-related resources together in one page.

Recommendations:

- The maps available online cover a large geographic area and take a long time to load. Providing smaller maps that deal with a specific area would be helpful.
- In the event of an evacuation, real-time traffic updates can be provided on Twitter feeds for different parts of each major metro area.



Learn about Contraflow Policies

Expectation: 4.2

Experience: 4.4

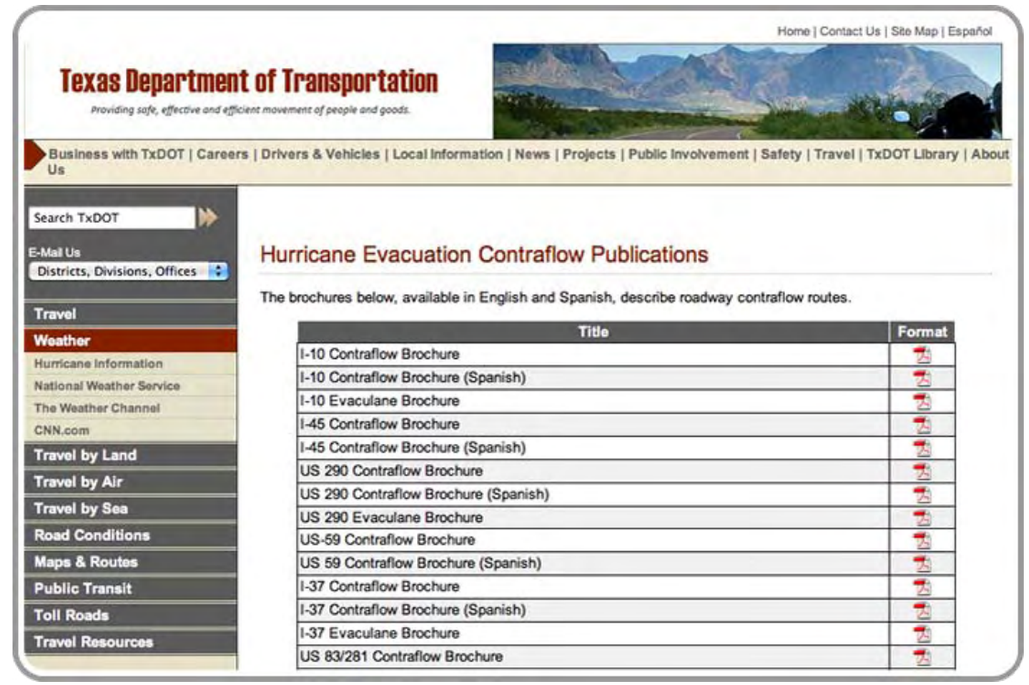
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Several participants were not familiar with the term "contraflow."
- At least one participant expected to see contraflow as a road condition.
- Users expected information about contraflow to be sent to their phone or mobile device.
- The term "Contraflow Brochure" turned some people off, specifically because the term "brochure" implied the information would be too general for their needs.

Recommendations:

- A graphical approach might help explain the contraflow policy faster for people who are unfamiliar with the term.
- An SMS or Twitter feed of contraflow information could be pushed to drivers' phones during evacuation.
- Rather than the phrase "Contraflow Brochure" the information could be presented with a more user-friendly title.



Find Safety Kits

Expectation: 5.4

Experience: 6.2

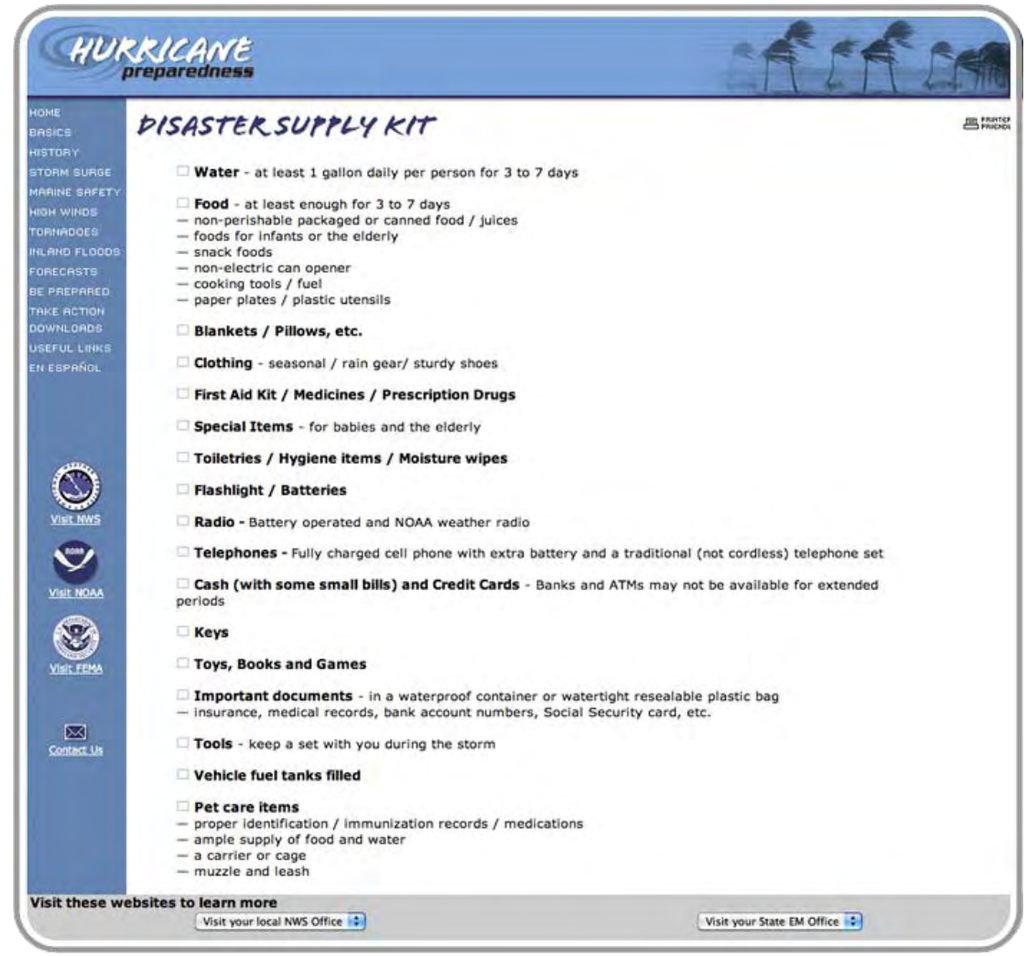
1	2	3	4	5	6	7
hard						easy

Findings:

- Many users did not find the survival kit packing list helpful because it was too inclusive and extreme.
- Using the TxDOT search tool to find this information did not yield results, and the user resorted to searching outside TxDOT.

Recommendations:

- Different Safety Kit lists should be available depending on the severity of the evacuation situation.
- The TxDOT search option should be reconfigured to provide results when searching for “safety kits” or “survival kits.”



Locate Area Shelters

Expectation: 4.2

Experience: 1.6

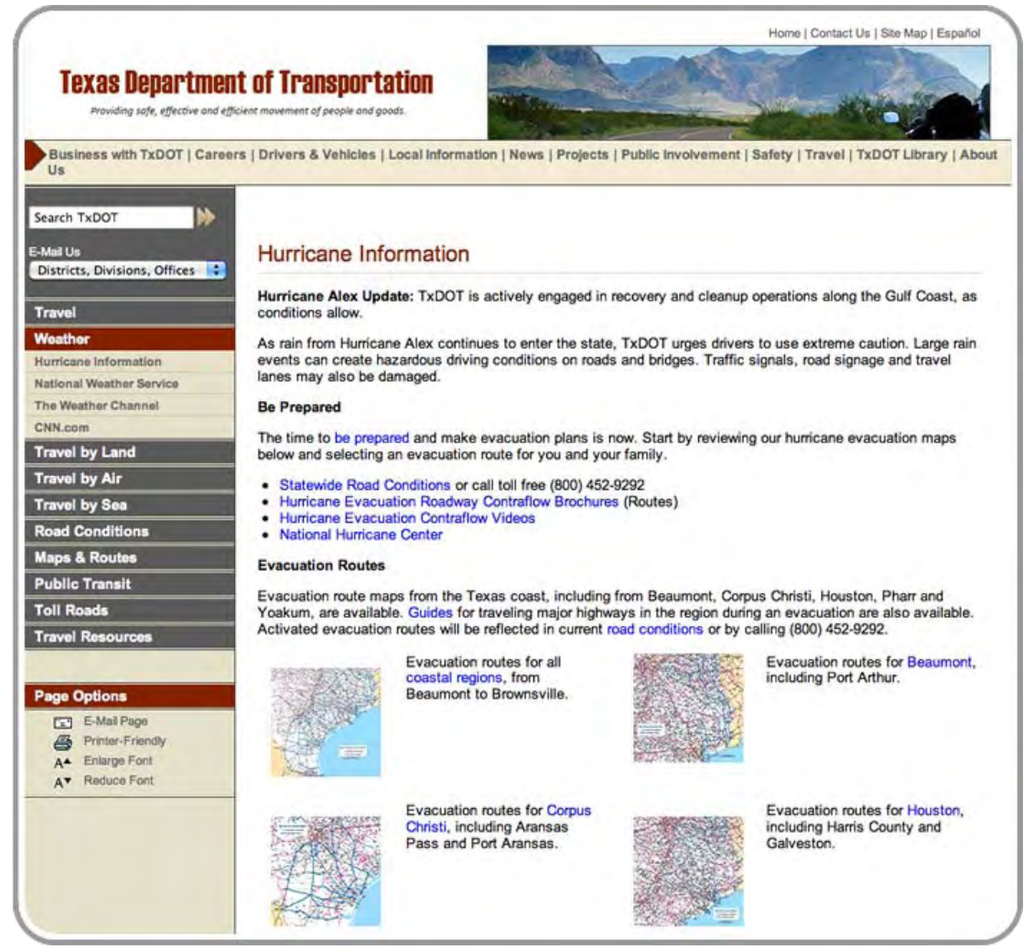
1	2	3	4	5	6	7
hard						*easy*

Finding:

- Due to the fact that shelters are not designated until the path of a storm is known and evacuation is imminent, participants were unable to find information about shelters in their area.

Recommendation:

- Although none of the state agency websites provide shelter information in advance of a hurricane, TxDOT could explain why that information is not yet available and where to find it when shelters are designated.



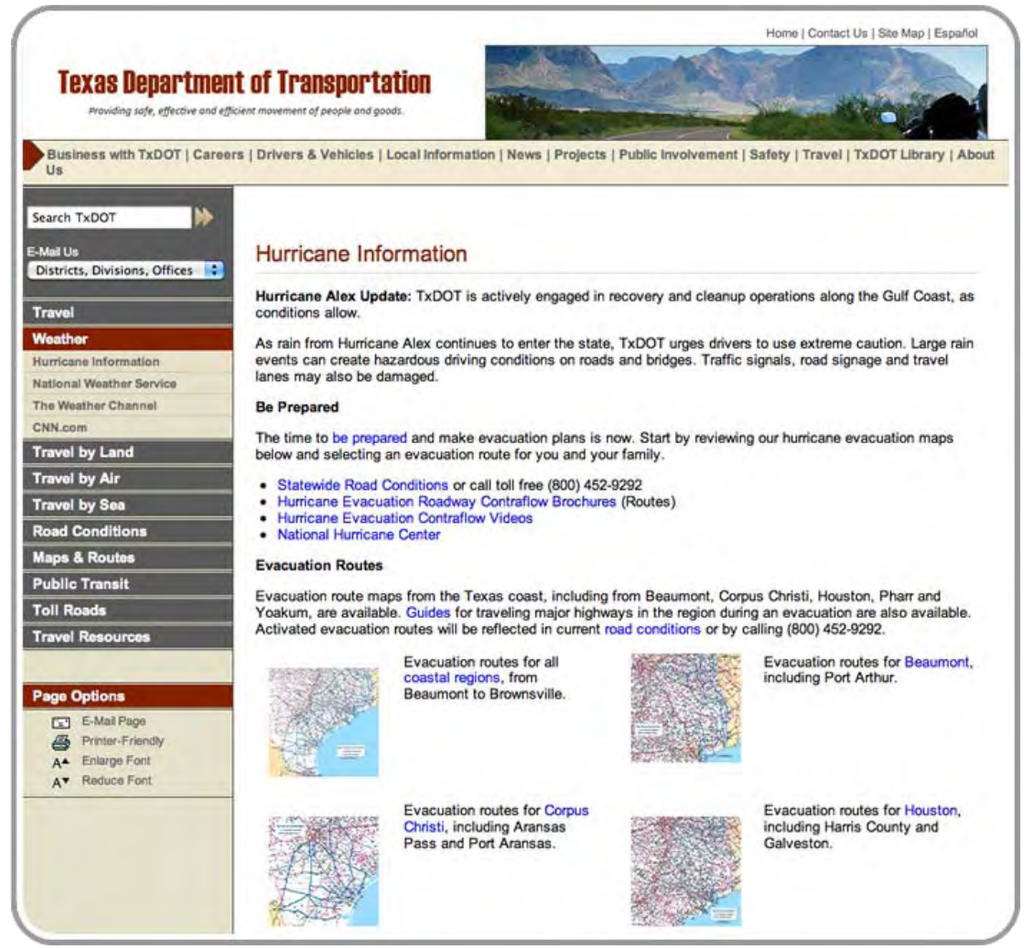
Share Information

Findings:

- Many users indicated they would share the information they found on the TxDOT site with family and friends by sending the link in an email.
- Some participants said they would let people know about the resource via Facebook.
- Nearly all of the users indicated they were interested in sharing this information with someone.

Recommendation:

- TxDOT could make the "Share This" or "Email This" option more prominent within the Contact Us section. Although the option is currently available at the bottom of the left navigation bar, users did not notice the link.



Task-Level Findings for Lawmakers

Learn about Memorial Signs

Expectation: 3.5

Experience: 3.5

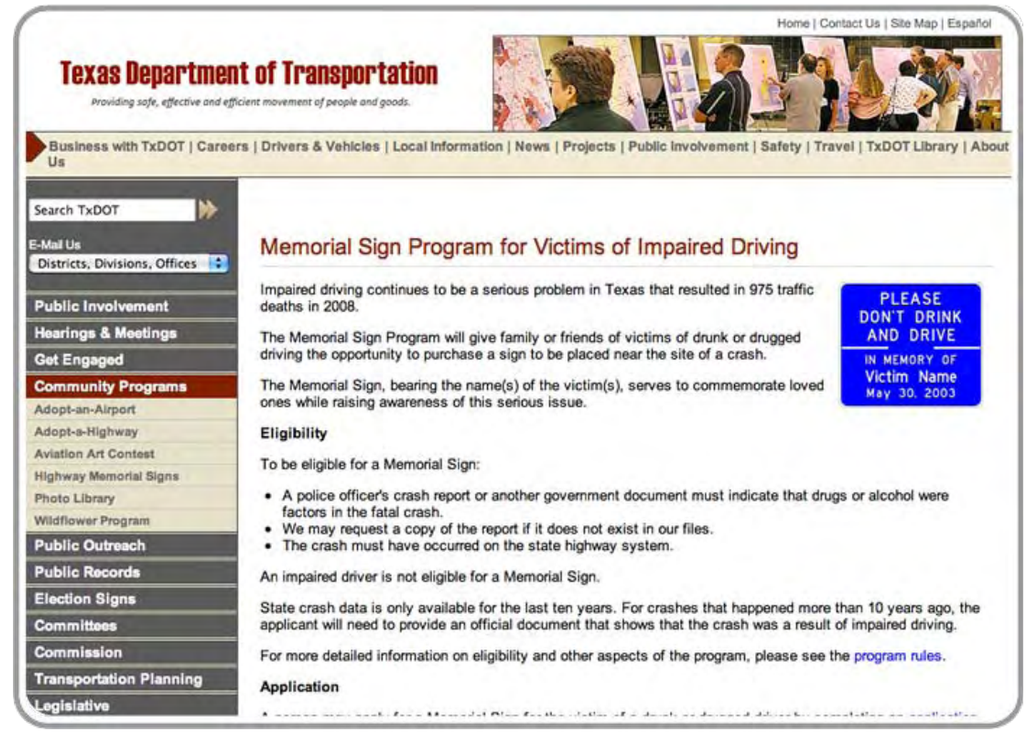
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Most participants had trouble finding the Memorial Sign page, but once they found it, they were happy with the content.
- Many users tried searching for the information on the TxDOT site but were not sure what search terms to use.
- It was not obvious to them that the information would be under Public Involvement.
- Users liked that the information was provided in bullet points and easy to read.

Recommendations:

- Conducting a card sort exercise would help reveal the best placement for this information within the website's hierarchy.
- Providing Memorial Sign information in more than one place would make it more accessible.
- Refining the key and metadata for the Memorial Sign page would make it more accessible through search.



Learn about Public Involvement

Expectation: 5.25

Experience: 4.25

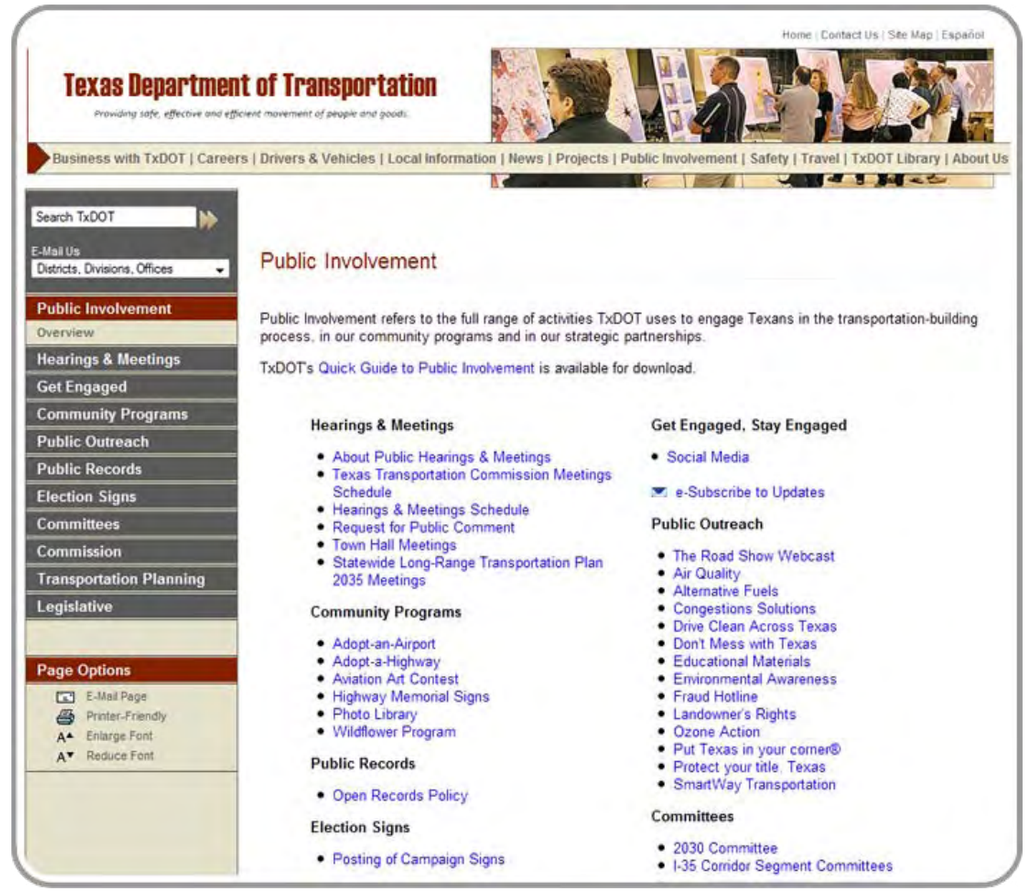
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Although participants were able to find the area of the site that contained meeting information, they were disappointed when meetings weren't available in their constituents' local area.
- Several meetings were listed that had already taken place, which made the schedule seem out of date.
- Participants wanted to see the location and time as well as the topic or description of the meeting.
- After finding the schedule, many participants indicated they would call TxDOT to confirm that the information they found was correct.

Recommendations:

- Meeting schedules could be given more prominence on the site, rather than being buried at the third or fourth level from the homepage.



Request Public Comment

Expectation: 5.5

Experience: 2.5

1	2	3	4	5	6	7
hard						*easy*

Findings:

- Many participants did not think the Public Comment form was something the average constituent would be concerned with. Instead, they viewed this as means for more specific projects and inquiries.
- Users thought it would be more useful to have the Request for Public Comment positioned as an email rather than a printable form that requires postage.

Recommendation:

- Enabling an email option for the Public Comment form would encourage more constituents to make a public comment.

Use Project Tracker

Expectation: 3.75

Experience: 4.75

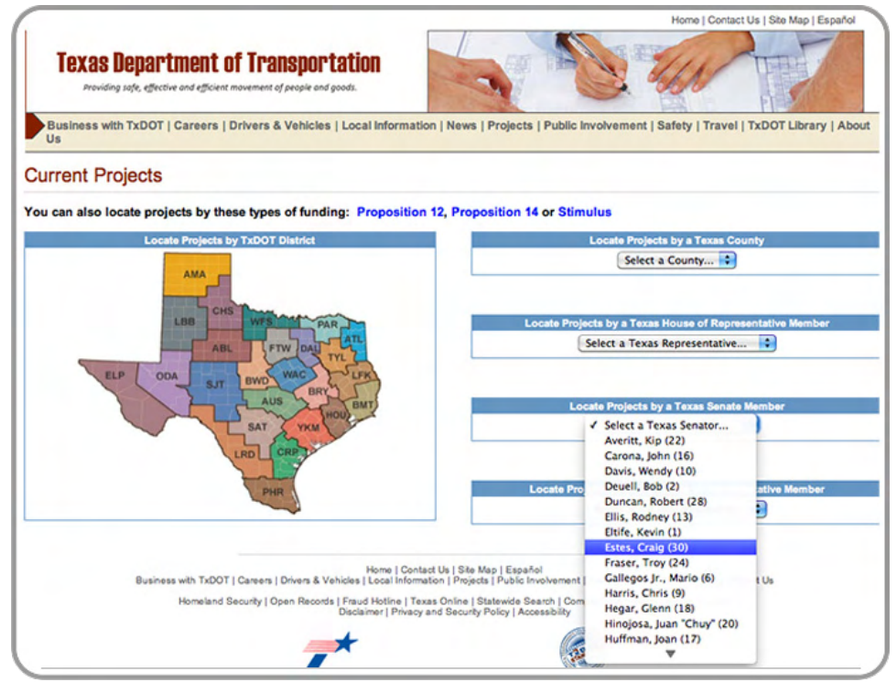
1	2	3	4	5	6	7
hard						*easy*

Findings:

- The Lawmaker segment relies heavily on phone communication to find and verify information they do not regularly access.
- When searching repeatedly by a representative or district, the main Project Tracker page must be refreshed in order to perform successive searches.
- The detailed project page provides information about both the construction and design phases, but the distinction is not obvious. Users often mistakenly thought the construction was completed, when the design phase was all that had been finalized.
- At least half of the participants sorted project information by columns by clicking on the column header.
- Some users wanted the option of searching by topic rather than roadway, and suggested having a search box within each county or representative.

Recommendations:

- The Project Tracker tool should be fixed so that no refresh is needed when searching by representative or district.
- The information on each individual project page should be more visually distinctive, with prioritized information, such as dates and locations, at the top.
- If users are not aware of who their representative is, it may be helpful to add a drop-down for "Who represents me?" that provides representation by county.



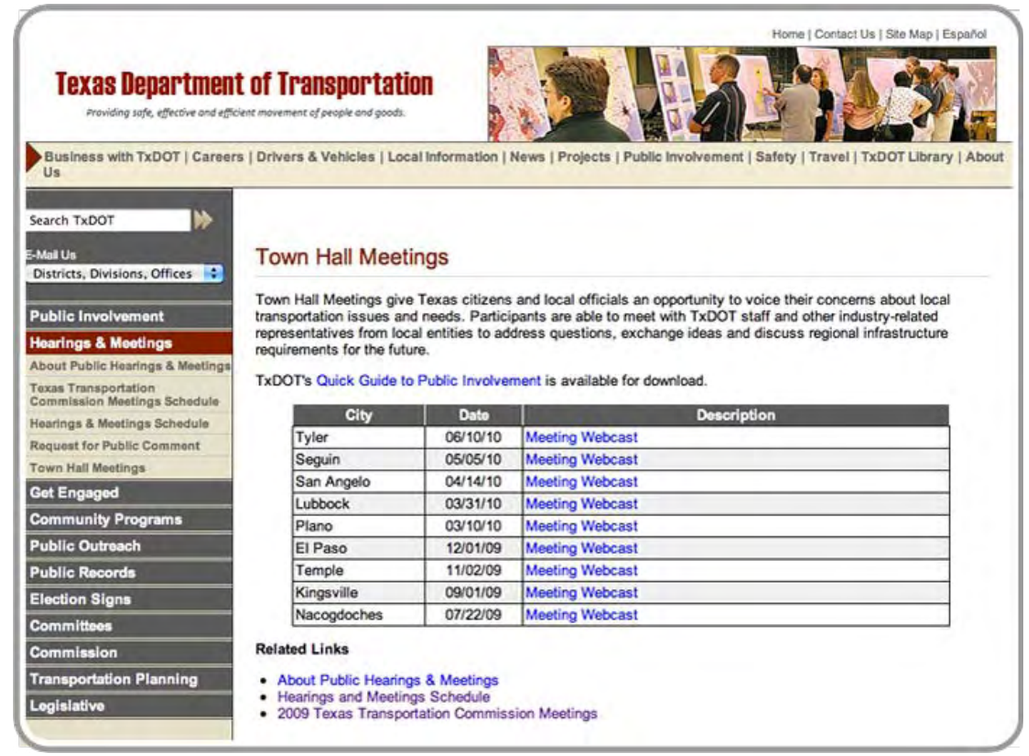
Share Information

Findings:

- Users were most likely to send out emails or newsletters to their constituents to keep them informed. Town Hall and other meeting information would be included in the newsletter for important issues.
- Participants indicated that they would email links to constituents with specific TXDOT-related issues.

Recommendation:

- Making the "Email this Page" or "Share This" option more apparent would be helpful.



Task-Level Findings for Doing Business with TxDOT

Find Plans Online

Expectation: 5.3

Experience: 3

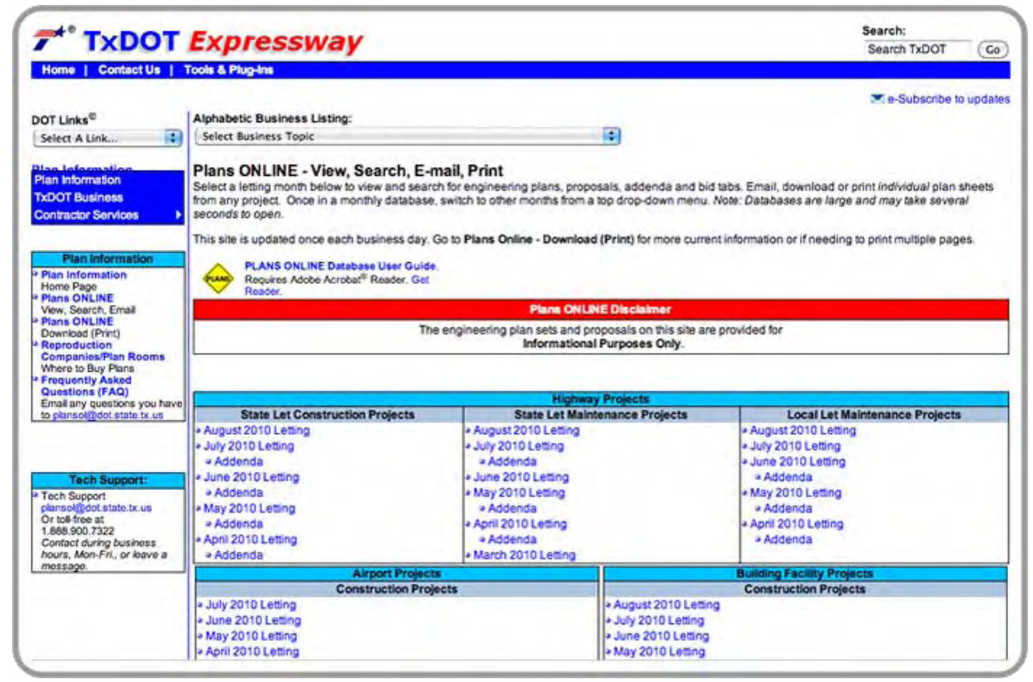
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Participants commonly searched for "TxDOT RFPs" or "TxDOT" from a search engine to navigate to the homepage.

Recommendations:

- TxDOT Expressway needs to follow the same layout and visual design as the rest of the TxDOT pages.
- Seeing that the content of the "Plans Online" database is helpful for contractors and consultants, the visual design should be brought up to date.



Verify Insurance

Expectation: 2

Experience: 4

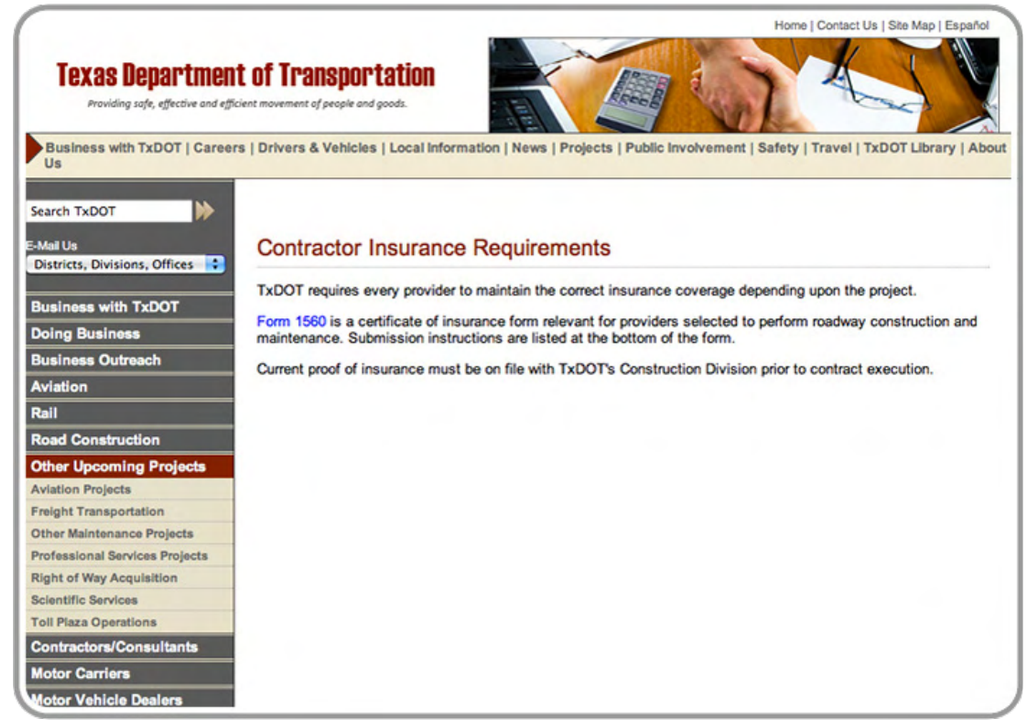
1	2	3	4	5	6	7
hard						easy

Findings:

- Some of the participants failed this task, as they were unable to find the correct link on the local navigation menu from Contractors/Consultants.
- The local navigation menu under the Doing Business section does not always align with the information in the main content area, which leads to user confusion and frustration.
- Verifying insurance is a specialized task that some contractors and consultants do not commonly perform, which explains why the information is not more prominent on the site.

Recommendations:

- Standardizing the structure and content of the local navigation menu would make it easier for users to form a mental model of the site and find the information they need.
- Providing feedback in the main content menu that matches the label from the local navigation menu would help guide the user's navigation.



Learn about Environmental Information

Expectation: 2

Experience: 2.3

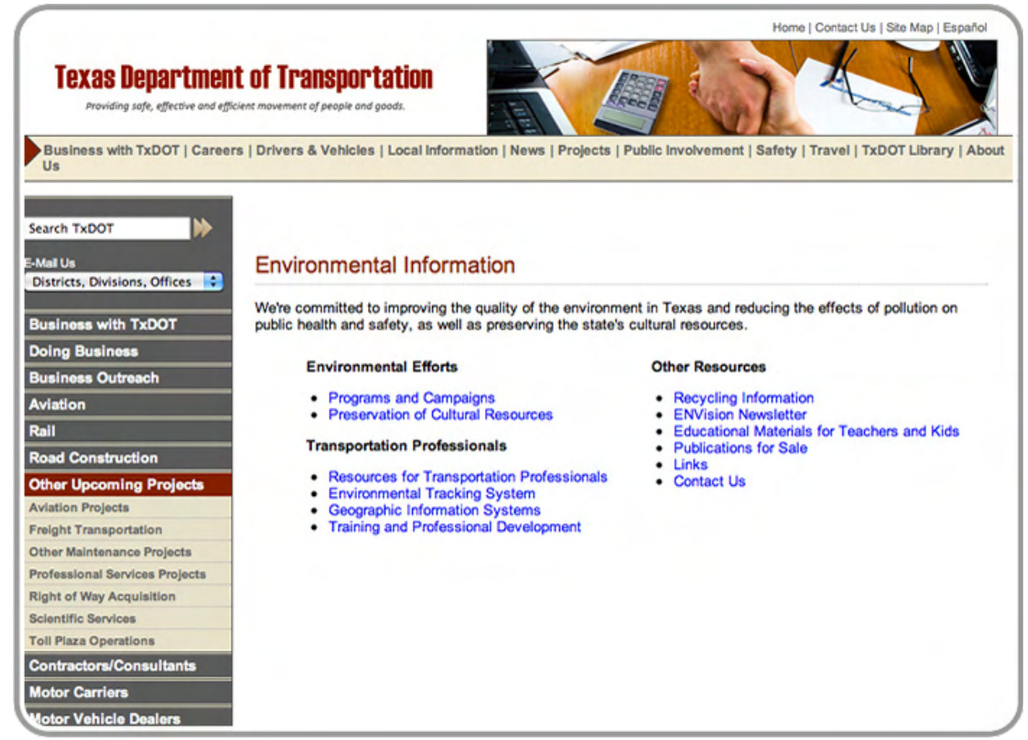
1	2	3	4	5	6	7
hard						*easy*

Finding:

- Participants were confused about why environmental posters for public relations campaigns were included with the Environmental Information for contractors and consultants.

Recommendation:

- The information specific for contractor and consultants should be separate from general environmental information.



Task-Level Findings for Travel Commercial

Register Restricted Loads

Expectation: 4

Experience: 3

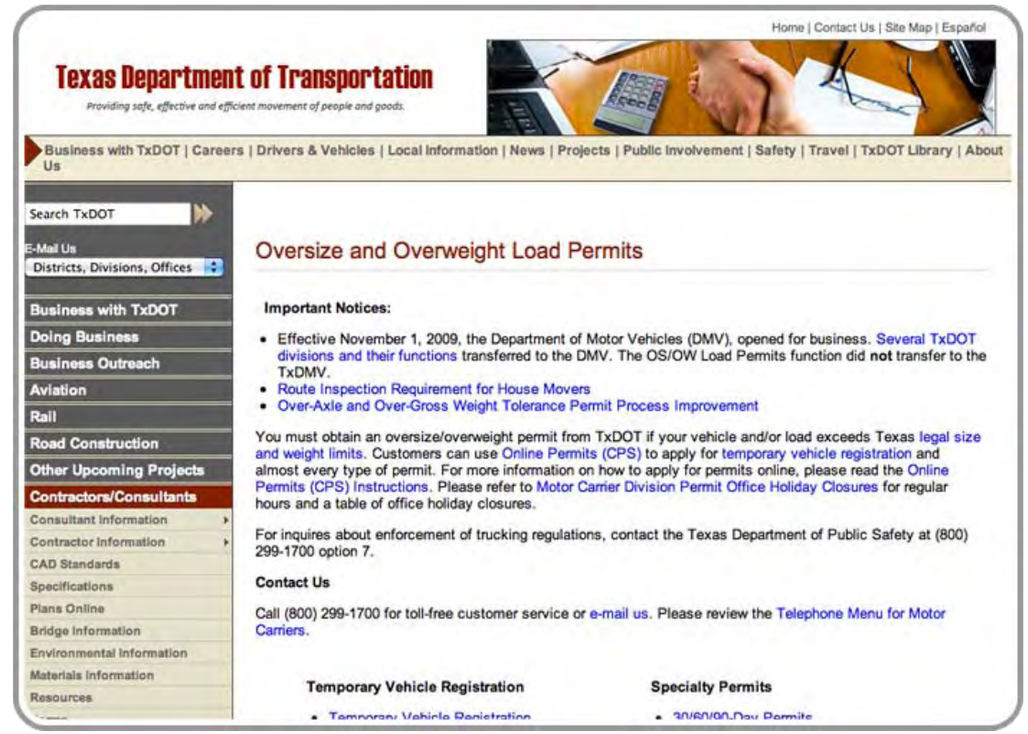
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Users are most concerned with the time taken to secure a permit and the inability to check the status of the permit online
- Many users indicated they would like to register for permits themselves in the same way they apply for route clearance.
- Users are able to get the permit page on their iPhone, but not on their Blackberry.

Recommendation:

- The users are adept at using the site and permit database, but their main concern is communication with TxDOT concerning permit approval.



Additional Tasks

Vehicle Registration and Driver License Renewal

Registration Expectation: 5.1

Registration Experience: 5.8

Driver License Expectation: 5

Driver License Experience: 5.8

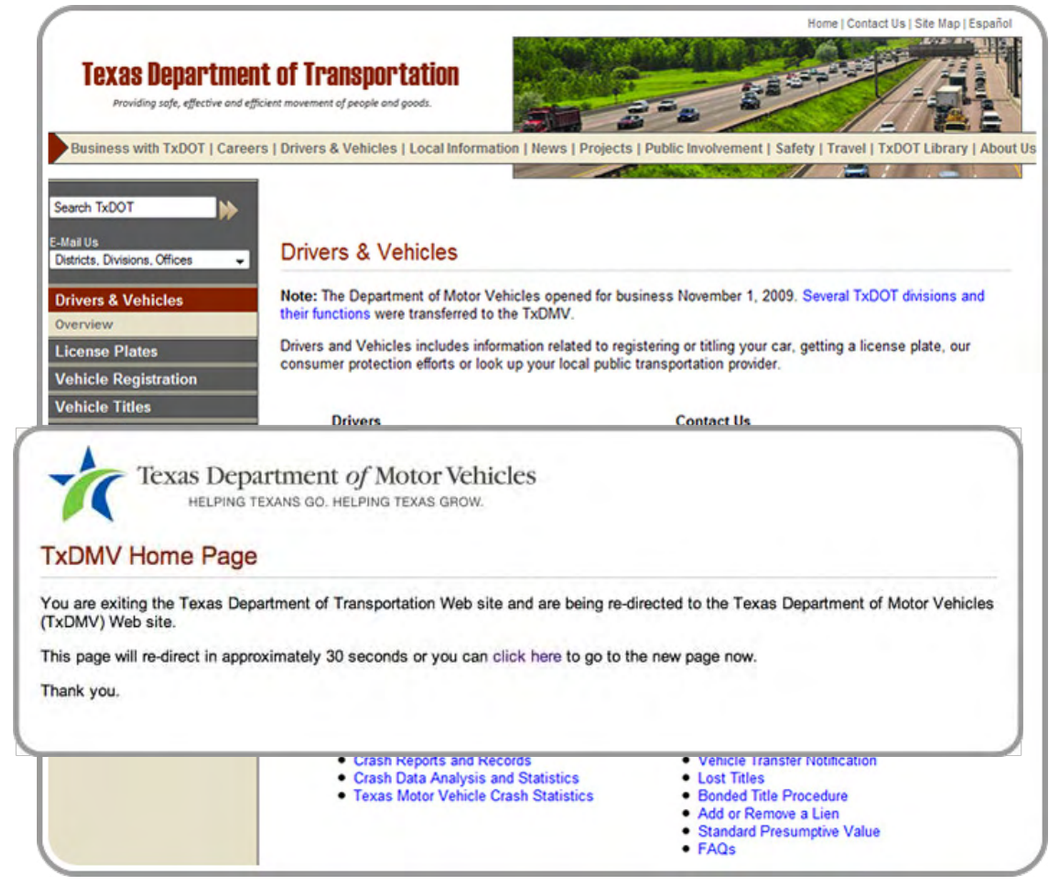
1	2	3	4	5	6	7
hard						easy

Findings:

- Users have no reluctance to click through to the DMV or DPS sites.
- The transition to the DMV is smooth, although most people expect to be redirected in less than 30 seconds.
- Most participants readily notice the Driver License and Registering Vehicle links from the Quick Links on the TxDOT homepage.

Recommendations:

- Provide a faster transition time between the TxDOT, DMV or DPS sites; 10 seconds is a more common increment of time for such a transition.
- Maintain links on the homepage for Driver License and Vehicle Registration; possibly make them even more prominent.



Find Online Help

Expectation: 4.3

Experience: 3.7

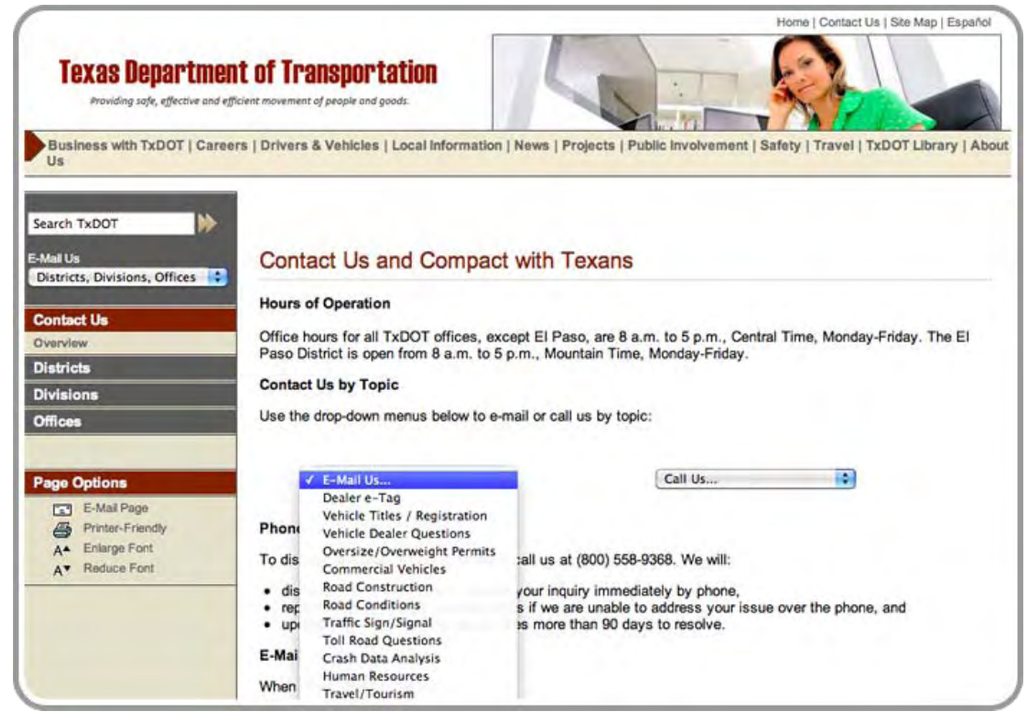
1	2	3	4	5	6	7
hard						*easy*

Findings:

- Users believe the contact form is only for general issues regarding TxDOT, not specific problems with the website.
- Many participants indicated they felt a website should have a specific help section.
- Several users indicated that a phone call would be faster than using the contact form online.

Recommendations:

- An online help option is necessary to meet the needs of users in real-time while they are interacting with the site.
- The website should offer timely feedback for users specific to the problems they are having online.



Appendix

Product Reaction Words

At the conclusion of each session, participants were asked to indicate which adjectives from a list of words best described the TxDOT website. The findings are rendered below in a word cloud, created by Wordle.com. The word size is relative to the number of participants who used the word to describe the TxDOT site (the larger the word, the more participants who identified it as a descriptor).